

TOLEDO PUBLIC LIBRARY  
Local History & Genealogy

## **SPECIFICATIONS**

**FOR THE**

**Jessup W. Scott High School**

---

**TO BE LOCATED ON THE SCHOOL  
SITE ON COLLINGWOOD  
AVE., BETWEEN WIN-  
THROP & MACHEN STS.**

**TOLEDO, OHIO**

TOLEDO  
PUBLIC  
LIBRARY



↓  
Stack

Toledo-Lucas County Public Library



IYMJL



Toledo. Board of education.  
Dept. of Architecture

# SPECIFICATIONS

FOR LABOR AND MATERIALS  
REQUIRED IN THE ERECTION  
OF A SCHOOL BUILDING TO  
BE KNOWN AS THE

"JESSUP W. SCOTT HIGH SCHOOL"

TO BE LOCATED ON THE  
SCHOOL SITE ON COLLING-  
WOOD AVENUE, BETWEEN  
WINTHROP & MACHEN STS.

TOLEDO, OHIO

---

ACCORDING TO PLANS PREPARED  
BY THE

DEPARTMENT OF ARCHITECTURE  
OF THE BOARD OF EDUCATION,  
TOLEDO, OHIO

DAVID L. STINE, ARCHITECT

1910 131



# INDEX.

INTRODUCTION .....	5
Definitions .....	5
Instrcutions to Bidders .....	5
General Conditions .....	8
Alterations or Modifications .....	14
Material and Workmanship .....	15
Improper Materials .....	16
Samples. ....	16
Building Permits .....	16
Water Permit .....	16
Contract and Bond .....	16
Guarantee and Bond .....	17
Notice to Sureties .....	17
Payments .....	18
Photographs. ....	19
Drawings .....	19
Shop Drawings .....	21
Drawings to be Returned .....	22
Legend. ....	22
Grade Line and Bench Mark .....	23
EXCAVATION. ....	24
Limitations. ....	24
General Conditions .....	25
Responsibility .....	26
Tile .....	27
DRAINAGE .....	27
Limitations. ....	27
Excavation. ....	28
Hard Tile. ....	28
Soft Tile .....	29
Filling .....	30
Clear Water Basins .....	30
CAST IRON DOWN PIPES AND DRAINS. ....	30
Limitations. ....	30
Cast Iron Pipe .....	31
Down Pipes .....	31
Cast Iron Drainage .....	32
Traps. ....	32
Manholes. ....	33
CONCRETE STRUCTURAL WORK .....	33
Limitations .....	33
General .....	34
Vault Lights .....	35
Anchorage .....	35
Holes in Concrete .....	38
Cement Finish .....	39
Water Proofing and Damp Course .....	40
Stone Concrete .....	41
Cinder Concrete .....	41
Cement .....	42
Sand .....	43
Stone .....	43
Steel .....	43
Forms .....	44
Mixing Concrete .....	45
Placing. ....	45
Construction Joints .....	45
Removal of Forms. ....	46
Cleaning Forms .....	47











Concreting During Extreme Weather .....	47
Bending and Placing Steel .....	47
Cleaning Steel .....	47
Splicing Steel .....	48
Floor Rods .....	48
Stirrups .....	49
Suspended Constreuction .....	49
Auditorium Floor .....	49
Walls .....	50
Footings .....	50
Grillage .....	50
Columns .....	50
Pointing Up .....	51
Testing .....	52
Alternate Bid .....	52
BRICK WORK .....	52
Work Included .....	52
Work Not Included .....	53
In General .....	54
Checking and Letting Out .....	54
Arches .....	55
Refectory Windows .....	55
Hollow Brick Backing .....	55
Solid Brick Backing .....	55
Fire Walls .....	56
Smoke Stacks .....	56
Vent Stacks .....	57
Foundry Stack Curb .....	57
Pressed Brick Interior Lining .....	57
Inside Sills of Shops .....	59
Exterior Face Brick Laying .....	59
Cleaning Down .....	60
Vitrified Brick .....	60
Mortar, General .....	61
Mortar, Exterior .....	61
Raggle Blocks .....	61
Setting Terra Cotta .....	61
Anchorage .....	62
Rear Terrace and Steps .....	63
Steps .....	63
Alternate Bid No. 1 .....	64
Alternate Bid No. 2 .....	64
FACE BRICK EXTERIOR .....	65
TERRA COTTA WORK .....	65
General .....	65
Material .....	66
Modeling .....	66
Shop Drawings .....	66
Delivery .....	67
Samples .....	67
Resnonsibility .....	67
CRANITE WORK .....	67
Limitations .....	67
CUT STONE WORK .....	67
Limitations .....	68
Materials .....	68
Setting .....	69
Setting Plans .....	69
Samples .....	69
Cut Stone, Alternate Bid .....	69
Carving .....	70

TRINIDAD LUCAS COUNTY PUBLIC LIB  
Local  
hist.

019897E

371.62



CAST CONCRETE STONE, ALT. BID.....	70
Aggregates .....	71
STRUCTURAL STEEL .....	72
Work Included .....	72
Steel .....	74
Cast Iron .....	75
Workmanship .....	75
Painting .....	75
Working Drawings .....	76
Alternate Bids .....	76
CARPENTER WORK .....	77
Work Included .....	77
Work not Included.....	77
Water Closet .....	77
Centers .....	77
Window Frames.....	78
Frames for Sliding Sash.....	78
Frames for Pivoted and Hinged Sash.....	79
Rough Outside Door Frames.....	79
Setting Frames .....	79
Sash .....	80
Temporary Doors and Windows.....	80
Roof Construction .....	80
Sizes of Material.....	80
Roof Sheathing .....	81
Tower Roofs .....	81
Gutter Linings .....	82
Dormers .....	82
Flag Staff .....	82
Hardware .....	83
SHEET METAL WORK.....	83
Work Included .....	83
Copper .....	84
Gutters and Down Pipes.....	84
Down Pipes .....	84
Valleys .....	85
Copper Decks .....	86
Flashing and Counter Flashing.....	86
Skylights .....	87
Ventilator Curb .....	87
Dormers .....	87
Louvers .....	88
Miscellaneous .....	88
TILE ROOFING .....	89
Work Included .....	89
General .....	89
Glass Tile .....	90
ASPHALT ROOFS .....	90
Work Included .....	90
General .....	91
GLASS AND GLAZING.....	92
Work Included .....	92
Plate Glass .....	92
Ribbed Glass .....	92
Leaded Glass .....	93
PAINTING .....	93
Work Included .....	93
General .....	93
COPY OF PROPOSED BLANK.....	95
COPY OF CONTRACT AND BOND.....	100









## INTRODUCTION.

The following specifications are intended to embrace and apply to all labor and materials, and to all persons interested in the erection of the building only so far as described.

**Definitions.** The Board of Education referred to in the following pages is the Board of Education of the City School District of the City of Toledo, Ohio. The Director of Schools means the executive officer of the Board of Education as defined by Statute, who is empowered to execute contracts for the Board of Education in the name of the school district. The Architect means the head of the Department of Architecture of the Board of Education. The Superintendent means any Superintendent, Engineer, Inspector or Clerk of the works on the building, representing the Director of Schools and the Board of Education.

**Instructions to Bidders.** All bids shall be made and submitted, in accordance with the terms of the published Notice to Contractors, which is as follows:

### **Notice to Contractors.**

Sealed proposals will be received, in accordance with law until 12 o'clock noon of



the ..... day of ..... at the office of the Clerk of the Board of Education, of the City School District of the City of Toledo, Ohio, for the furnishing of material and the performance of labor required in the construction of a school building to be erected on the school site on Collingwood Ave., between Winthrop and Machen Sts., to be known as the

“JESSUP W. SCOTT HIGH SCHOOL.”

The nature of the work to be done is set forth in the drawings and specifications for the same, prepared by the Department of Architecture, of the Board of Education, Toledo, Ohio, David L. Stine, Architect.

The Plans, Specifications, Proposal Forms, Forms of Bonds and Contracts are on file and can be seen at the office of the Department of Architecture of the Board of Education.

Copies of the Plans and Specifications will be furnished by the Director of Schools to any contractor applying for the same. However, a cash deposit in the sum of \$50 for each set furnished will be required, such deposit to be refunded upon the proper return in good order of said Plans and Specifications prior to .....

All bids shall be made and submitted on special blank forms to be obtained from the Department of Architecture, Board of









Education. Each bid shall be accompanied by Cash, an approved Surety Co. Bid Bond, or a Certified Check upon a solvent Toledo Bank, made payable to the Board of Education, Toledo, Ohio, in an amount equal to ten per cent. (10%) of the bid tendered, as a guaranty that the bidder will, if the award is made to him, enter into a bona fide contract with the Board of Education for the work and furnish the bond required under the Specifications. If for any reason whatsoever the bidder fails to enter into a proper contract and to execute a proper bond as required by the Specifications, the amount of such guaranty shall be retained by the Board of Education as and for liquidated damages sustained by reason of his failure so to do.

Every proposal or bid shall contain the full name of each person or company interested in the same and the labor and material bid upon shall be separately listed, prices and amounts being written in ink and expressed in words as well as in figures.

Bidders shall furnish satisfactory evidence of their experience and ability to construct work of the character required. The Board of Education reserves the right to reject any or all bids, or to accept any bid which it may deem advantageous to the



City School District of the City of Toledo,  
Ohio.

By order of the Board of Education.

GEORGE L. McKESSON,  
Director of Schools.

This work may be bid upon either as a whole, or in parts, as hereinafter specified under separate heads, and the fact that a proposal is submitted will be construed by the Board of Education to mean that the bidder making such proposal agrees to undertake and to faithfully carry out all the work in full accordance with the provisions of these Drawings and Specifications.

Each bidder upon this work, or any part thereof, shall read the specifications for the same from beginning to end, in order that he may fully inform himself as to what each portion of the work includes, and the relation of contractors, each to the other.

Each bidder shall thoroughly acquaint himself with the character and conditions of the work as shown by the drawings and recited in the specifications.

Each bidder shall visit the premises and ascertain the existing condition of the site, preparatory to submitting his proposal.

**General Conditions.** It shall be understood that all materials, labor, transportation, or equipment mentioned, shown or









reasonably implied in the plans or specifications and necessary for the substantial execution of everything required under any particular head, shall be furnished in place completed, and cleaned up by the Contractor responsible therefor, unless otherwise explicitly provided in these specifications.

All Contractors shall work in harmony, and co-operate with each other in advancing the work, and all shall have equal rights upon the premises.

Contractors will be held responsible for all work embodied in their contracts, and shall not sublet any portion of their work without the written consent of the Director of Schools.

Contractors shall properly barricade their work, and erect and maintain effective shelter for all materials delivered on the site, to protect them from damage by the elements or otherwise. Barricades and proper signal lights shall be provided and maintained to insure the safety of workmen and the public.

Contractors shall not post, or permit others to post advertising matter of any kind upon the building or grounds without permission from the Director of Schools.

Contractors shall at all times provide sufficient facilities for inspection.

Contractors shall at any time when so directed by the Architect or Superintend-



ent, clean up and remove any and all rubbish produced by them, and at final completion of the work, shall repair all damage, and leave the same clean and in perfect condition.

Contractors shall give their personal attention to the work and shall furnish competent foremen to remain upon the work during its progress and until its completion.

Each Contractor shall, in all cases, lay out his own work, and he will be held responsible for its accuracy.

Each Contractor shall prosecute his work at the proper time without delay to other contractors.

Each Contractor shall acquire the right to use any patented article, apparatus or method of construction that may be required in the specifications for his work, pay all royalties and save the Board of Education harmless from any cost or expense arising from such use.

Each Contractor shall provide the means for hoisting and conveying his own materials about the building, and the erection plant shall be of sufficient capacity to push the work without delay.

Each Contractor shall furnish his own scaffolding generally. However, this requirement shall be waived in cases where one scaffold will serve two or more pur-







poses without delay to the owner of said scaffolds.

Each Contractor engaged upon the work shall guarantee the Board of Education against damage caused by accident to the building, to materials stored in or about the premises, and against liability for injury to persons in or about the said premises during the construction and until the final acceptance of the work.

Any Contractor who shall either damage or destroy the work of any other contractor, or the property of the Board of Education, shall repair or make good the same at his own expense.

It shall be each Contractor's duty to watch the progress of the building, and ascertain when and where his work will be needed, and he shall be prepared to begin the work promptly, and shall proceed vigorously with its execution.

The Director of Schools will not engage either to give advance notice to Contractors, or to notify them when to begin or resume their work, and all Contractors will be held responsible for any and all consequences resulting through their neglect or carelessness.

All work shall be prosecuted with the utmost despatch and in case any Contractor shall delay the same through failure to provide or deliver the necessary materials and labor, or shall retard the regular ad-



vancement of the work through neglect, misconduct, or inability, the Director of Schools may, after he has given said Contractor, his foreman or clerk a twenty-four hour notice in writing, provide, at the expense of said Contractor, such materials and labor as he may think necessary to properly advance the work, and the Director of Schools will deduct all costs and charges thus incurred from any monies due said Contractor.

A full copy of all plans and specifications will be furnished by the Board of Education, which plans and specifications shall be kept on file at the building during the progress of the work, and shall be for the free use of everyone interested.

All explanatory notes, etc., on the plans shall be taken as part of these specifications. The drawings and specifications are intended to supplement but not necessarily duplicate each other, hence, work called for in the specifications, and not shown on the plans, or work shown on the plans, and not mentioned in the specifications, shall, nevertheless, be executed by the Contractors in whose class the work clearly and rightfully belongs.

Failure to show or mention petty details shall not be warrant for the omission of anything necessary for the proper completion of the work to the entire approval of the Director of Schools.







Contractors shall not take advantage of any clerical errors that may develop in either plans, specifications or details. Such errors, ambiguities or discrepancies shall be reported immediately by the Contractor to the Architect for his revision or correction.

Should it appear that any particular specification conflicts or contradicts any statement in the general specifications, the particular specification shall govern.

The Contractor for any branch of the work will be held responsible for the proper execution of the same. He shall therefore satisfy himself as to the correctness of the figured dimensions on plans, by actual calculations, comparisons and checking, before ordering material or executing any part of the work.

Any explanations or interpretations of the drawings and specifications obtained by a Contractor or his Agent, from any employee of the Department of Architecture, which does not conform to the drawings and specifications, shall not be considered in the final settlement of the contract.

Whenever it appears to the Contractor, or his Agent, that any material called for, or a method of construction shown on the plans or mentioned in the specifications, is faulty, impractical or insufficient to such an extent that, in his opinion, if carried out,



would result in unsafe construction, or damage to persons or property, he shall instantly stop work on the parts in question and notify the Director of Schools at once, in writing, of such opinion, and in what respect the drawings and specifications are at fault; and that part of the work shall not proceed further until the Contractor has received a written order from the Director of Schools.

**Alterations or Modifications.** The Board of Education reserves the right to make any alterations or additions, or require omissions of any work or materials herein specified, or shown on the drawings during the progress of the building, that they may find necessary or desirable, without notice to the surety or sureties on any bond, and the same shall be acceded to by the Contractor or Contractors engaged upon such work and carried into effect without in any way violating or vitiating the original contract. And the valuation of such alterations, additions or omissions shall be agreed upon in writing between the Director of Schools and the Contractor, before being carried into effect. Verbal agreements for changes will not be recognized under any circumstances.

The Board of Education reserves the right to demand further securities when additions are made, if, in its judgment, such security is necessary.







The Board of Education reserves the right to enter upon the premises at any time during the progress of the work and to install any work not included in the plans and specifications.

The right is reserved by the Director of Schools to require the immediate dismissal and the removal from the premises of any incompetent or undesirable workmen.

All work shall be executed in accordance with the laws and ordinances of the Building Department of the City of Toledo.

**Materials and Workmanship.** All material mentioned in these specifications shall be provided and put in place by the contractors unless otherwise stipulated.

All materials shall be new, and the very best of their respective kinds unless otherwise stated. And where no name or make is specified or referred to as a standard, goods equal to the very best in the market will be required.

Where the make or name of an article is given, it shall be understood that said make or name is mentioned only in order that a standard may be established, and that goods other than those mentioned will be considered, provided, however, that the Contractor shall state in his proposal the make or name of the goods upon which such proposal is based, and furnish a complete specification of the same.



In the event of the proposal not stating this, the goods originally specified or referred to as a standard shall be used.

**Improper Materials.** Any material not in conformity with these specifications will be rejected by the Director of Schools and shall be immediately removed from the premises by the Contractor responsible for the same. The installation of defective material shall in no way constitute an acceptance of same.

**Samples.** Samples of the materials bid upon shall be furnished the Director of Schools upon request.

**Building Permits.** The Board of Education will take out the building permit, and the Contractors shall take out the permits necessary for the use of streets, sidewalks, sewers, etc., and pay all fees for the same.

**Water Permit.** The Contractor for concrete shall take out and pay for the water permit, and all Contractors using water shall pay for it in their just proportion, according to the rules of the Water Works Department of the City of Toledo.

**Contract and Bond.** The contract which the bidder agrees to enter into shall be in







the form adopted by the Board of Education.

Before commencing the work each Contractor shall furnish a bond, acceptable to the Board of Education, in a sum equal to fifty per cent. of the contract, covering the fulfillment of the terms of the contract, with the additional obligation, that such Contractor will make prompt and full payments to all persons furnishing him with materials or performing labor in the prosecution of the work, and save the Board of Education harmless from all costs resulting from his failure so to do.

Each Contractor shall also furnish to the Director of Schools a correct and full schedule of all the quantities and prices of materials under contract, and upon which the contract is based. This schedule will be used only as a check upon estimated quantities at payment periods.

**Guarantee and Bond.** These specifications require that certain work and materials be guaranteed for a specified time after the acceptance of the building and the final payment therefor. And the bond which will be required in connection with such contracts shall cover said guarantee in full force until its expiration.

**Notice to Sureties.** The final acceptance and payment upon the contract shall not be



considered as conclusive evidence on the part of the Board of Education, that the provisions of the plans and specifications have been fully complied with, if it shall subsequently appear that the Contractor has willfully, fraudulently or through collusion, supplied inferior materials or workmanship, or has departed from the terms of his contract.

In any such case the Director of Schools shall have the right notwithstanding such final acceptance and payment, to cause the work to be properly done, and satisfactory materials supplied to finish the work in accordance with the plans and specifications therefor, at the cost and expense of the Contractor and the Sureties of his bond, and shall have the right to recover against the Contractor and his Sureties the cost of such work, together with such other damages as the Board of Education may suffer by reason of the Contractor's default, the same as if such final acceptance had not been made.

**Payments.** Monthly payments will be made as the work progresses, upon the certificate of the Architect, based upon ninety per cent. (90%) of the work actually done, and the final payment will be made after the work has been fully completed and accepted. All certificates shall be subject to the approval of the Director of Schools, and







no payment made shall be construed as an acceptance of any defective work or material.

**Photographs.** At the regular estimate periods, the contractor shall furnish the Director of Schools with photographs 5" x 7" in size, mounted on cloth, and taken from stations or viewpoints as directed by the Architect, showing the condition and extent of the work at the time the estimate is made. The photographs shall bear the name of the building and the date upon which they were made.

**Drawings.** The general drawings herein described are intended to co-operate with these specifications and shall be considered as so doing. They are designated as follows:

**General.**

- |   |                            |
|---|----------------------------|
| 1. Site plan.                                     | } $\frac{1}{8}$ "<br>scale |
| 2. Footing plan.                                  |                            |
| 3. Elevations, walls and footings<br>below grade. |                            |
| 4. Drainage plan.                                 |                            |
| 5. Basement plan.                                 |                            |
| 6. Basement mezzanine plan.                       |                            |
| 7. Ground floor plan.                             |                            |
| 8. Natatorium mezzanine and<br>gymnasium detail.  |                            |
| 9. First floor plan.                              |                            |
| 10. Second floor plan.                            |                            |
| 11. Third floor plan.                             |                            |



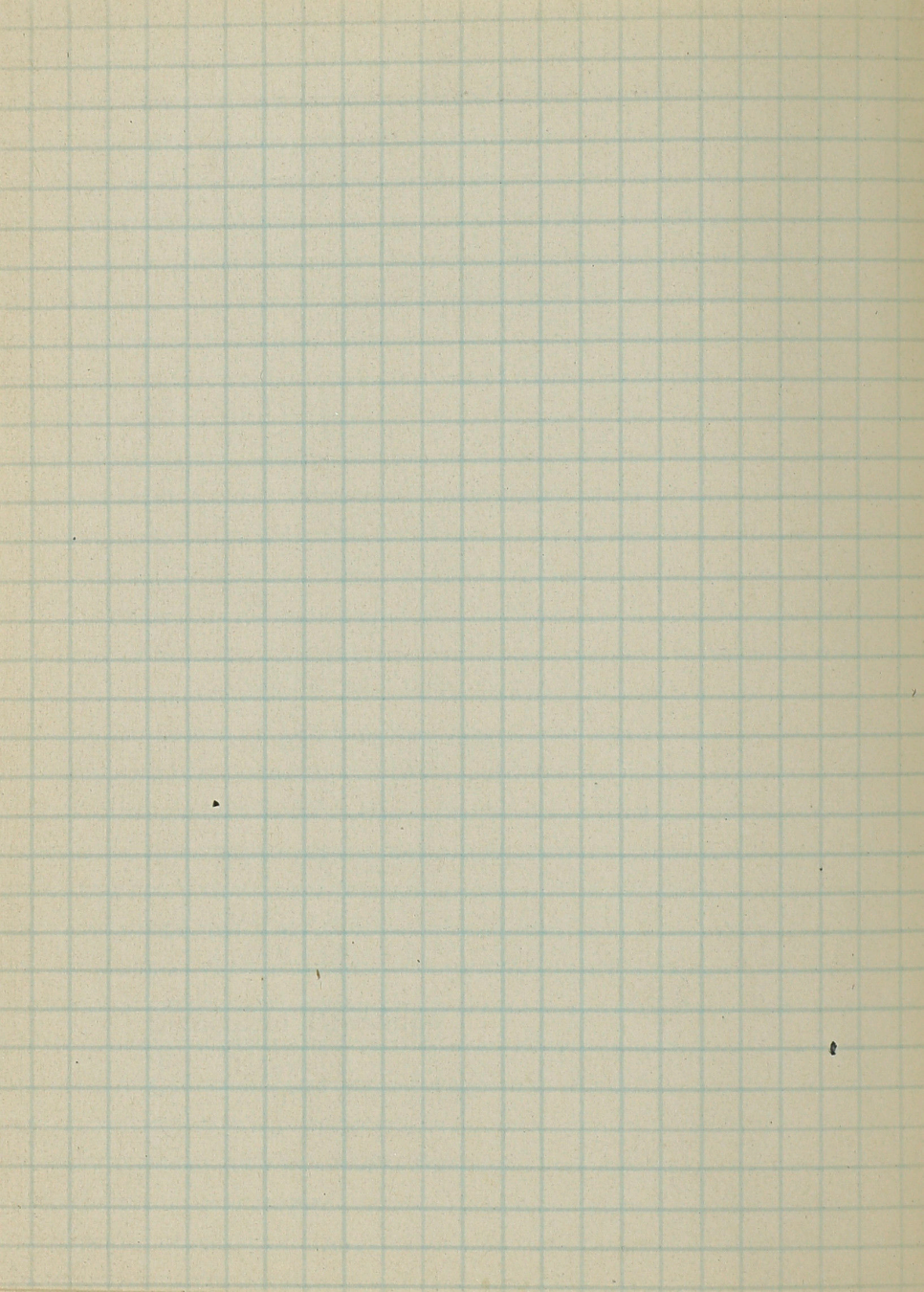
- |     |  |                            |
|-----|--|----------------------------|
| 12. | Roof plan.   | } $\frac{1}{8}$ "<br>scale |
| 13. | Front and rear elevations.   |                            |
| 14. | Side elevations of right wing.   |                            |
| 15. | Side elevations of left wing.  |                            |
| 16. | Sections through center pavilion.  |                            |
| 17. | Sections through auditorium and<br>gymnasium.                              | }                          |
| 18. | Details of towers.   | } $\frac{3}{4}$ "<br>scale |
| 19. | Details of bay window center<br>pavilion.                                  |                            |
| 20. | Details of upper part center<br>pavilion.                                  |                            |
| 21. | Details of front of left wing.   |                            |
| 22. | Details of entrances center pa-<br>vilion, front elevation.                |                            |
| 23. | Details of entrances 102-130-140-<br>160-164-184 and typical win-<br>dows. | }                          |
| 24. | Details of rear terrace.   | }                          |
| 25. | Details of windows and en-<br>trances 169-172.                             |                            |
| 26. | Full size details of window frames.  |                            |
| 27. | Alternate details for cut stone<br>and cast concrete stone.                | } $\frac{3}{4}$ "<br>scale |

### Structural Drawings.

- |     |                          |                                 |
|-----|--------------------------|---------------------------------|
| 50. | Basement mezzanine plan. | } Concrete<br>Framing<br>Plans. |
| 51. | Ground floor plan.       |                                 |
| 52. | First floor plan.        |                                 |
| 53. | Second floor plan.       |                                 |







- 54. Attic plan.
- 55. Third floor and roof plan.
- 56. Front and rear elevations.
- 57. Elevations of right wing.
- 58. Elevations of left wing.
- 59. Auditorium details.
- 60. } Miscellaneous details, etc.
- 61. }
- 62. Column schedule, concrete.
- 63. } Beam and girder schedules.
- 64. }
- 65. } Concrete.
- 65a. Stirrup schedules.
- 66. }
- 67. }
- 68. }
- 69. } Structural steel details.
- 70. }
- 71. }
- 72. }

Together with supplementary details to be hereafter furnished both to enlarged scale and full size.

All figures on plans shall be taken generally in preference to measurement by scale. Where figures are not given, and the scale cannot be used, Contractors shall apply to the Director of Schools for further information. Details shall have precedence over the general drawings. Any reference to the plans or drawings in these specifications means all of the drawings.

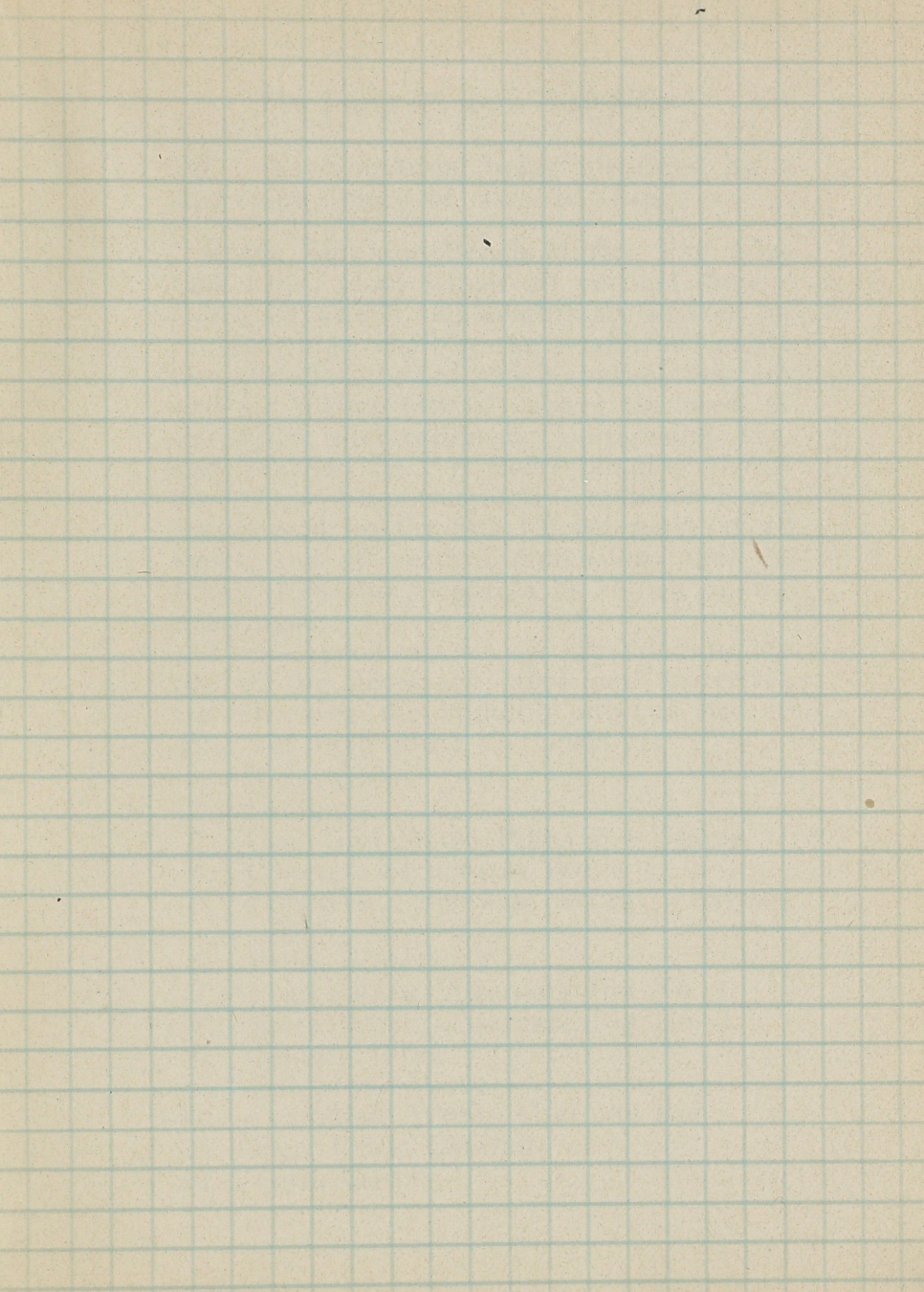
**Shop Drawings.** Working shop draw-



ings, jointing plans, erecting plans, etc., hereafter required shall be submitted by the Contractors to the Director of Schools for approval. Approval of shop and working drawings shall cover design and detail only, and shall not be construed as a check upon the same. And such approval shall neither relieve the Contractor from his responsibility for proper construction, nor from the necessity of furnishing the labor and materials required by the original drawings, but not shown on said shop drawings, when approved.

**Drawings to Be Returned.** The blue print copies of the original drawings of the building furnished to the Contractors, are, and shall remain the property of the Board of Education. Contractors will be charged with drawings and specifications delivered to them and will be credited with same upon their return. For all drawings lost, destroyed or not returned, the Contractors will be held responsible. Drawings shall be protected and used with care by the Contractors, and when the work is completed, shall be returned to the office of the Department of Architecture, Board of Education, Toledo, Ohio.

**Legend.** The various materials comprised in the construction of the building are illustrated by the "Legend" placed on each sheet of the general and detail draw-







ings. Each material being identified by a particular design of cross hatching.

**Grade Line and Bench Mark.** The "Datum Line" from which all vertical dimensions, elevations and heights are figured on the drawings, shall be the established grade line, the elevation of which shall be ten feet and six inches (10' 6") above the level of the street intersection at Collingwood Ave. and Machen St. A corresponding bench mark shall be permanently established and maintained on the site for reference at all times, and all vertical dimensions shall be taken from this elevation as shown on the drawings.

These specifications are intended to apply to the necessary labor and materials, for enclosing the building only, as hereinafter set forth under the heads of

1. Excavation.
2. Drainage.
3. Cast Iron Down Pipes and Drains.
4. Concrete Structural Work.
5. Concrete Structural Work, Alternate Bid.
6. Brick Work.
7. Brick Work, Alternate Bid No. 1.
8. Brick Work, Alternate Bid No. 2.
9. Granite Work.
10. Cut Stone Work.
11. Cut Stone Work, Alternate Bid.
12. Face Brick Exterior.
13. Terra Cotta.



14. Cast Concrete Stone Work, Alternate Bid.
15. Structural Steel.
16. Structural Steel, Alternate Bid.
17. Carpenter Work.
18. Sheet Metal Work.
19. Tile Roofing.
20. Composition Roofing.
21. Glass and Glazing.
22. Painting.

The tile floors of the entrance porches, all interior walls and partitions, (except as hereafter specified) warm air and vent flues, finished floors, plastering, or interior finish of any kind, are not included under these heads.

## EXCAVATION.

(Read General Conditions.)

**Limitations.** Under this head is included all excavations below the grade line for foundations of walls, piers, columns, porches, outside steps of building and rear terrace, together with the necessary excavation for the Shops, Mechanical Laboratory, Engine Room, Boiler Room, Coal Storage, the Natatorium and Swimming Pool, and for the Blast Air Ducts bounded by columns Nos. 145, 159, 148 and 162 under the Laboratories; central ducts bounded by columns Nos. 104, 126, 127 and 105; central ducts bounded by columns 80, 60,







61 and 81, and ducts under the Foundry and Woodturning Shop, bounded by columns 29, 32, 47 and 44.

The excavation for drainage, foundations of boiler settings and blast air ducts not specifically mentioned are not included under this head.

**General Conditions.** All excavations shall be made to the depths shown on the sections, and laterally to the extent required.

The outer boundary wall excavation shall be parallel to, and at least one foot (1' 0") outside of the outer face of the wall at the bottom. The deep excavation of the center section, the air ducts, and the natatorium, shall have the banks sloped to the surface at an angle of at least 30 degrees, to prevent caving.

Excavations for column footings shall be cut true to dimensions, neither more nor less, and shall be made in exact position. These shall be left perfectly level on the bottom, free of water and earth and ready for the reception of concrete.

The contractor for excavation shall provide means for freeing the trenches, etc., of water, either by pumping or connecting temporarily with the drainage system, and he shall state in his proposal a price per cubic yard for all excavations required below the levels shown in the drawings.

Additional work required and not shown on the drawings will be paid for by the



Board of Education at such unit price. Work called for by the plans and specifications and not executed will be figured on the unit basis and deducted from the contract price.

All earth taken from the excavation shall be left on the building site and used either for refilling around the walls and grading to the required lines, or for such other purpose as the Director of Schools or Superintendent in charge may require.

The contractor for excavation shall save out all top soil and deposit the same in a pile at a convenient point on the building site.

**Responsibility.** The contractor for excavation will be held responsible for all excavations up to the time the contractor for concrete takes possession, and he shall deliver to him such excavations in sections of fifty or more lineal feet, clean, dry and unobstructed, except by such bracing as may be necessary to protect the banks against caving. The contractor for excavation shall notify the contractor for concrete in writing at least three days before the completion of any sections of said work, and the contractor for concrete shall then have twenty-four hours in which to take possession of said sections, and said contractor for concrete shall thereafter be held responsible for the same.

The contractor for excavation shall give







the contractors for plumbing and drainage and their employees, free access to the work and shall co-operate with them in the installation of the Drainage System. See Drainage.

**Fill.** The excavated space around the walls shall be filled with earth, well tamped in place.

Where soft tile are laid around the walls of the coal storage, the 4 inches of fill against the walls, extending from the tile to the grade line, shall be of cinders, or blast furnace slag, and the soft tile shall be covered with the same immediately after inspection and approval.

Wherever the present level of the site falls below the line of indicated inside excavation, it shall be filled and tamped solid to the required level, using sand if possible, taken from the excavation. Clay must not be used for filling inside the building unless expressly permitted by the Director of Schools.

## **DRAINAGE.**

(Read General Conditions.)

**Limitations.** Under this head is included the excavations for the trenches of the drainage system, the refilling of said trenches after drains are in place, the furnishing and laying of all hard and soft



tile drains, the clear water basins, and the connections to the sewer in the street as shown on the drainage plan.

**Drains shown in dotted lines are not included under this head.**

**Excavation.** Trenches shall be excavated for all hard and soft tile drains shown on the drainage plan.

Bottoms of trenches shall be smooth and true and shall have a uniform fall to points of discharge or between levels established on drawings.

Bottoms of trenches shall be solid, undisturbed earth, and where trenches enter or cross filled ground, proper means of supporting the tile shall be provided.

Trenches for soft tile drains outside of the building shall average two feet in depth below present grade.

**Hard Tile.** All tile outside of the building not otherwise marked, and such tile as are used inside of the building in connection with the soft tile system and marked H. T., shall be hard tile.

Hard tile shall be sound, salt glazed sewer pipe, with full hubs, smooth and free from cracks or craze and shall be of the sizes shown on the drawings. Where tile change size, proper reducer sections shall be used. All hard tile shall be laid in conjunction with the horizontal cast iron pipe inside the building, and the contractor for







drainage, with the contractor for plumbing, will be held responsible for the perfect alignment and jointing of said tile with said cast iron. Wherever tile connects with cast iron, the tile shall not be chipped with the hammer, but shall be ground to fit the hub of the cast iron pipe. All tile shall be laid with a uniform fall between levels established on drawings, and all the joints of the same shall be made with a ring of oakum saturated with portland cement and grout caulked into the joint, and pointed full with rich cement mortar, wiped clean on the inside as each piece is laid.

Proper fittings shall be placed for future connections, as shown by dotted lines, and these fittings shall be left securely plugged.

Wherever cast iron drains inside the building connect with hard tile drains, such connections shall be made from two to five feet outside the walls.

**Soft Tile.** All tile marked S. T. on drainage plan shall be No. 1 quality soft tile. All elbows, bends, and the terminals entering clear water basins marked H. T. shall be hard tile. The soft tile shall be whole and sound and shall be laid with a uniform fall to points of discharge. All joints shall be neatly butted and wrapped with a 3-inch strip of cheese cloth of a length sufficient to go twice around the tile. After the tile have been laid, inspected and approved they



shall be covered with 6 inches of coarse river sand or cinders.

**Filling.** When the work has been inspected and approved by the Superintendent, the trenches shall be refilled with earth and tamped solid in 8-inch courses, to the surface.

**Clear Water Basins.** The clear water basins shall be constructed of hard burned brick laid in portland cement mortar, or of concrete. They shall be provided with cast iron frames, and shall have cast iron covers bolted down on rubber gaskets. The basins shall be of the sizes shown on the drawings and shall be made air and water tight.

## CAST IRON DOWN PIPES AND DRAINS.

(Read General Conditions.)

**Limitations.** Under this head is included all cast and wrought iron down pipes, together with supports for the same, the connections to all roof gutters, the 12-inch running trap, together with the manholes and vent pipe for same; the drainage inside the building not otherwise marked, and the digging and refilling of all necessary trenches.







The down pipes from the Refectory and Tower roofs and the drains shown in dotted lines are not included under this head.

**Cast Iron Pipe.** All cast iron pipe required for the work shall be extra heavy in quality, sound and free from flaws. When erected it shall be secured in place with standard hooks and stays in a substantial and stable manner approved by the Director of Schools. All joints shall be caulked with oakum and melted lead and shall be gas and water tight.

**Down Pipes.** Down pipes of sizes shown on drawings shall be installed immediately upon the completion of the roofs. The foot bends shall have 1' 6" external radius with shoe supports cast on the fittings and shall rest on concrete piers built up from the column footings.

The connections to copper gutters shall be by means of brass caulking ferrules soldered to copper funnels and caulked into the hub of the iron pipes. The ferrules soldered to the funnels will be furnished by the contractor for the sheet metal work and the contractor for down pipes shall caulk the joints.

The drains from the decks of the center bays, front and rear, shall be 3-inch cast iron pipe carried under the third floor and connected to one of the down pipes from the third floor roof as shown.



These drains shall have Y branch connections left properly capped, for the wastes from the drinking fountains in the Refectory.

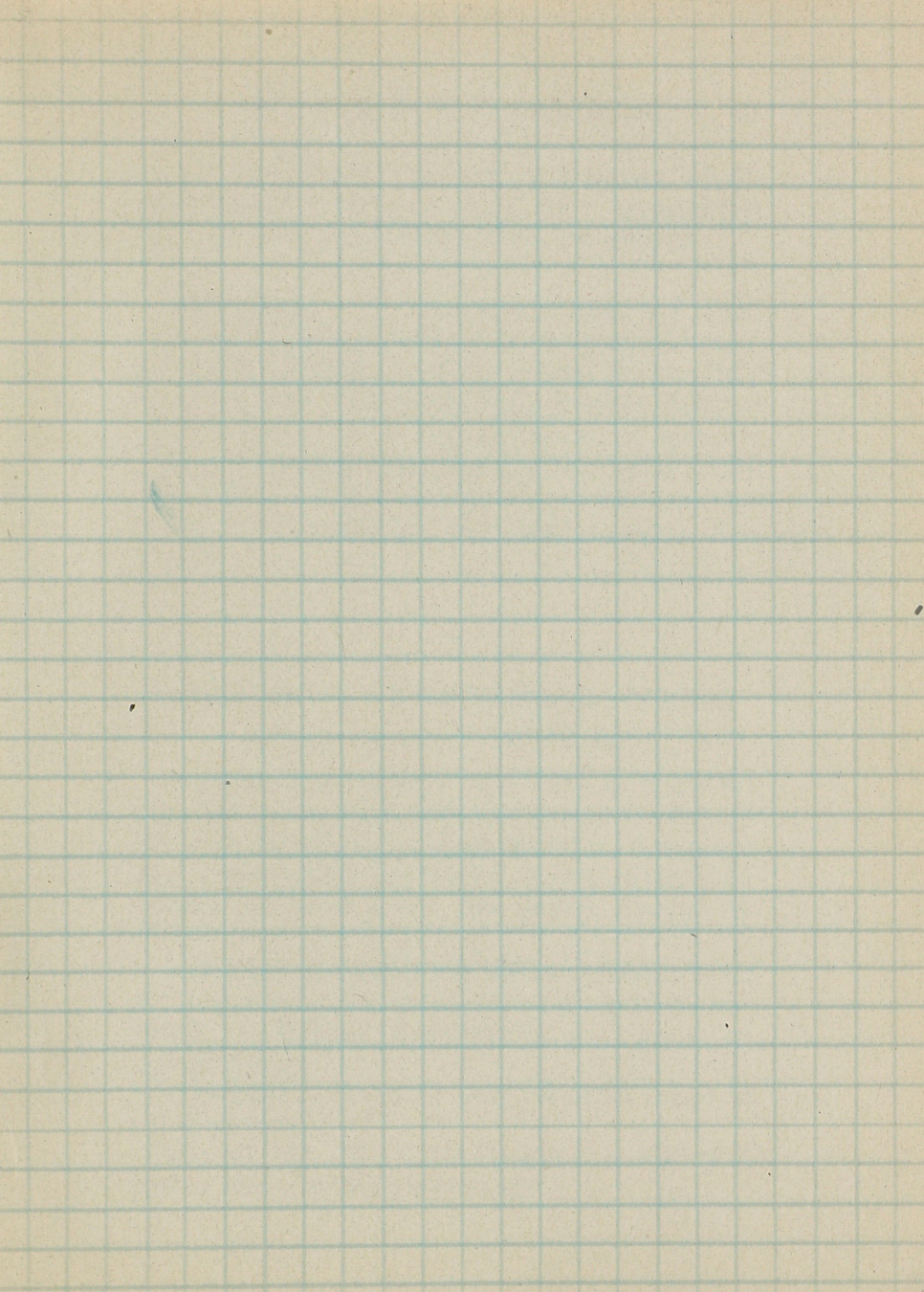
**Cast Iron Drainage.** Where cast iron pipes are laid in trenches they shall rest on solid undisturbed ground, and where pipes enter or cross filled ground, they shall be supported on concrete piers or by other means approved by the Director of Schools.

The cast iron pipe shall be laid at the same time and in conjunction with the hard tile, and the contractor for plumbing, with the contractor for hard tile, shall be responsible for the perfect alignment and jointing of the cast iron with the tile. The connections to hard tile lines shall be from two to five feet outside the building.

Where pipe changes size, proper reducers shall be provided and the fittings to receive all future lines shall be exactly placed and left securely plugged.

After drains are laid, inspected and approved, the trenches shall be refilled with sand, tamped solid to the surface.

**Trap.** The main house trap shall be placed in a brick manhole as shown on the drainage plan. The trap shall be a 12-inch cast iron double U with fresh air vent and clean-out limbs. The clean-out limbs shall be fitted with brass screw plugs. The fresh







air vent shall be carried a distance of 30 feet away from the trap and terminated in a second shallow manhole as shown.

**Manholes.** The manholes shall be constructed of foundation brick laid in pure portland cement mortar, joints thoroughly slushed, and plastered with cement mortar on the inside. The floors shall be of cement.

Each manhole shall have a cast iron cover and frame. The shallow one shall have the cover perforated for the inlet of air. See detail.

## CONCRETE STRUCTURAL WORK.

(Read General Conditions.)

**Limitations.** Under this head is included all labor, material and equipment necessary for the satisfactory completion of all plain and reinforced concrete work described herein or shown on the plans, except as follows:

All duct construction below ground floor having side walls shown less than 12 inches thick, including foundation for stack in Forge Shop.

Concrete mezzanine and steps at stage in Auditorium.

Beams (F-179 to 184 inclusive), slab and ducts over Auditorium stage.



All cinder concrete filling for floors.

All concrete floors in basement and ducts except inclines from ducts at columns 80, 81, 104, 105.

All concrete floors or steps on ground floor in unexcavated portions, including floor of Swimming Pool.

Attention is directed to concrete work in third floor and ceiling as shown on structural steel plans, and contractors are cautioned to read the whole specifications. See Brick specifications for concrete work under that head.

**General.** All methods or devices used for carrying out the work shall conform to the best up-to-date practice and shall at all times be subject to approval of the Director of Schools.

The sizes and details for all footings, columns, girders, beams, walls, etc., shall be as shown on plans or schedules. With the permission and under the direction of the Director of Schools, however, the concrete sections of columns, girders or beams may be varied not to exceed  $\frac{3}{8}$ " in order that stock sizes of lumber may be used.

For the underground concrete work the contractor for concrete shall work in harmony with the contractor for excavation, in accordance with plans outlined in excavation specification.

The contractor for concrete shall submit







unit prices for cement, concrete, forms and steel, separately, upon which basis settlement shall be made for deductions from or additions to the work shown on plans, or herein specified.

**Vault Lights.** Prismatic lights shall be furnished and set in place in the terrace at rear of the building as shown on plans. The design and specifications for their construction shall be submitted to and approved by the Director of Schools. Contractors shall figure on American Luxfer Prism No. 66.

**Anchorage.** All anchor bolts, rods, bars or bearing plates required throughout the building for the connection of steel, wood, brick, terra cotta or other material to the concrete, shall be set accurately in place by the contractor for concrete, as indicated on the plans or herein specified. All of the material for such anchorage shall be furnished by the contractor for concrete, except such as is used for the connection to concrete of the steel work included in structural steel contract, which will be furnished by the steel contractor.

Care must be taken to keep such anchorage in place during the concreting, as the contractor for concrete will be held responsible for its accurate position in the finished work. Wherever possible in the judgment of the Director of Schools, other



contractors will fabricate their work to conform to the position of anchor bolts in the finished concrete, but should such anchorage be sufficiently out of place through carelessness of the contractor for concrete to cause extra expense to other contractors in the furnishing or placing of additional material, such extra expense will be charged to the contractor for concrete.

The anchorage for brick work and terra cotta shall consist in general of No. 12 galvanized iron wires in all outside columns, beams or girders, and in basement walls where brick facing is shown. These wires shall project about 8 inches from face of concrete and shall be so spaced that there will be one anchor for approximately every four square feet of concrete surface. Special anchorage for the brick and terra cotta shall be used at bays or elsewhere as shown on plans.

Where directed, wire anchors shall be placed in concrete ceilings of Auditorium vestibules of ground, first and second floors, at base of concrete rail of Auditorium balcony, and for ornamental plaster arches in corridors.

The contractor for concrete shall also furnish and place the gas pipe sleeves for securing hand rails to concrete work in the fly gallery of the Auditorium stage, visitors' gallery of Gymnasium, and elsewhere as required.







Suspended ceilings are contemplated as noted below and the contractor for concrete shall furnish and place the anchorage for the same in accordance with detailed plans to be furnished later. Such anchorage shall consist generally of  $\frac{3}{8}$ " threaded rods with nuts, and bent into concrete as shown on plans, and shall be so spaced that there will be approximately one anchor for every 12 square feet of suspended ceiling surface.

**Basement Ceiling.** Area bounded by columns Nos. 79, 80, 103, 104. One-half area bounded by columns Nos. 60, 61, 80, 81. One-half area bounded by columns Nos. 80, 81, 85, 86. One-half area bounded by columns Nos. 101, 100, 104, 105. One-half area bounded by columns Nos. 104, 105, 126, 127. Area bounded by columns Nos. 29, 32, 44, 47. Area bounded by columns Nos. 145, 148, 162, 159.

**Ground Floor Ceiling.** Area bounded by columns Nos. 2, 6, 20, 24. Area bounded by columns Nos. 39, 58, 54, 35. Lobbies to girls' and boys' toilets at columns Nos. 81, 105. Area between beams B-236, 237. Area between beams B-335, 336.



**First Floor.** Ceiling over vestibule and closet of men's and women's rest rooms at columns Nos. 81 and 105. Area bounded by columns Nos. 10, 15, 33, 28.

**Second Floor Ceiling.** Area bounded by columns Nos. 79, 82, 106, 103, except stairwells and room for heat coils. Ceiling over vestibule and closet of men's and women's rest rooms at columns Nos. 81 and 105. Area bounded by columns Nos. 9, 12, 30, 27.

**Holes in Concrete.** The contractor for concrete shall leave in the concrete work throughout the building all holes required for heating, plumbing, drainage, or other purposes, as shown on concrete, general, or drainage plans. These holes must be accurately located as the contractor for concrete will be charged for any cutting made necessary by his carelessness. The round holes for piping or for heat and vent flues shall be made by setting and properly securing standard wrought iron gas pipe to the centering. This material shall be furnished by the concrete contractor. The pipe shall be cut to proper length and free from dirt or grease. Special reinforcement shall be used around all rectangular or large circular holes, the type of which is shown on plans.







Attention is called to holes in the concrete girders which are reinforced with steel trusses in third floor construction.

Outlet boxes and other necessary provisions for electric wiring in the floor slabs, beams, girders or columns will be furnished and installed by the contractor for electric work. The contractor for concrete, however, shall arrange to give access for the placing of such work in the centering and shall co-operate with the contractor for electric work to facilitate the installation of such work.

**Cement Finish.** The entire balcony floor in Auditorium, as shown, including floors of dressing rooms, and lobbies opening to second floor corridor, the floor of the visitors' gallery of the Gymnasium, a portion of the third floor, the basement mezzanine, the terrace at rear of the building, the roof over locker room, and elsewhere as shown, shall be finished with cement mortar one inch thick.

To provide for placing terrazzo base, a  $\frac{3}{4}$ " wood strip  $2\frac{1}{2}$ " wide shall be placed in the mortar finish around all walls of the Auditorium balcony, dressing rooms, and lobbies opening to second floor corridor, and where future seats are to be built above the balcony floor.

The cinder concrete and finish on roof over locker room shall be divided into



blocks not larger than six feet square, with waterproofing in vertical joints between them.

All mortar shall be mixed in the proportion of one part cement to one and one-half parts of clean, coarse sand, which shall be approved by the Director of Schools. The mortar shall be placed at the same time as the body of the floor and trowelled to a smooth finish. The contractor must take especial care to protect such finished floors, as they will not be accepted until the completion of this contract.

**Waterproofing and Damp Course.** The enclosing walls of all parts of the building having floor levels below the grade line, excepting walls around the coal storage, shall be made impervious outside by the use of waterproofing compound composed of asphalt products.

The outside enclosing walls of the building shall have a damp-proof course the entire width of the wall, starting at the grade line outside and terminating at top of the concrete floor inside.

Waterproofing shall be applied on top of the rough concrete slab of roof over locker room, also in vertical joints between blocks of finish.

The walls shall be dry and thoroughly clean before the waterproofing is applied. The material for this work and the method







of its application shall be subject to approval, and the results shall be satisfactory to the Director of Schools.

**Stone Concrete.** The concrete used in this work shall consist of cement, fine and coarse aggregates, mixed with a sufficient quantity of water to obtain a rather wet consistency, but not sufficiently wet to cause a separation of materials in placing. The relative proportions of cement, fine and coarse aggregates shall be determined by the Director of Schools, depending upon the fine and coarse aggregates to be used, it being desired to produce a mixture of the greatest possible density. Contractors may assume for the purpose of estimating that the relative proportions of cement, fine and coarse aggregates will be approximately 1, 2 and 4, respectively, using as the unit of measurement one sack of cement weighing 94 pounds and assumed as one cubic foot in volume; and that there will be required 6 sacks or one and one-half barrels of cement per cubic yard of concrete in place.

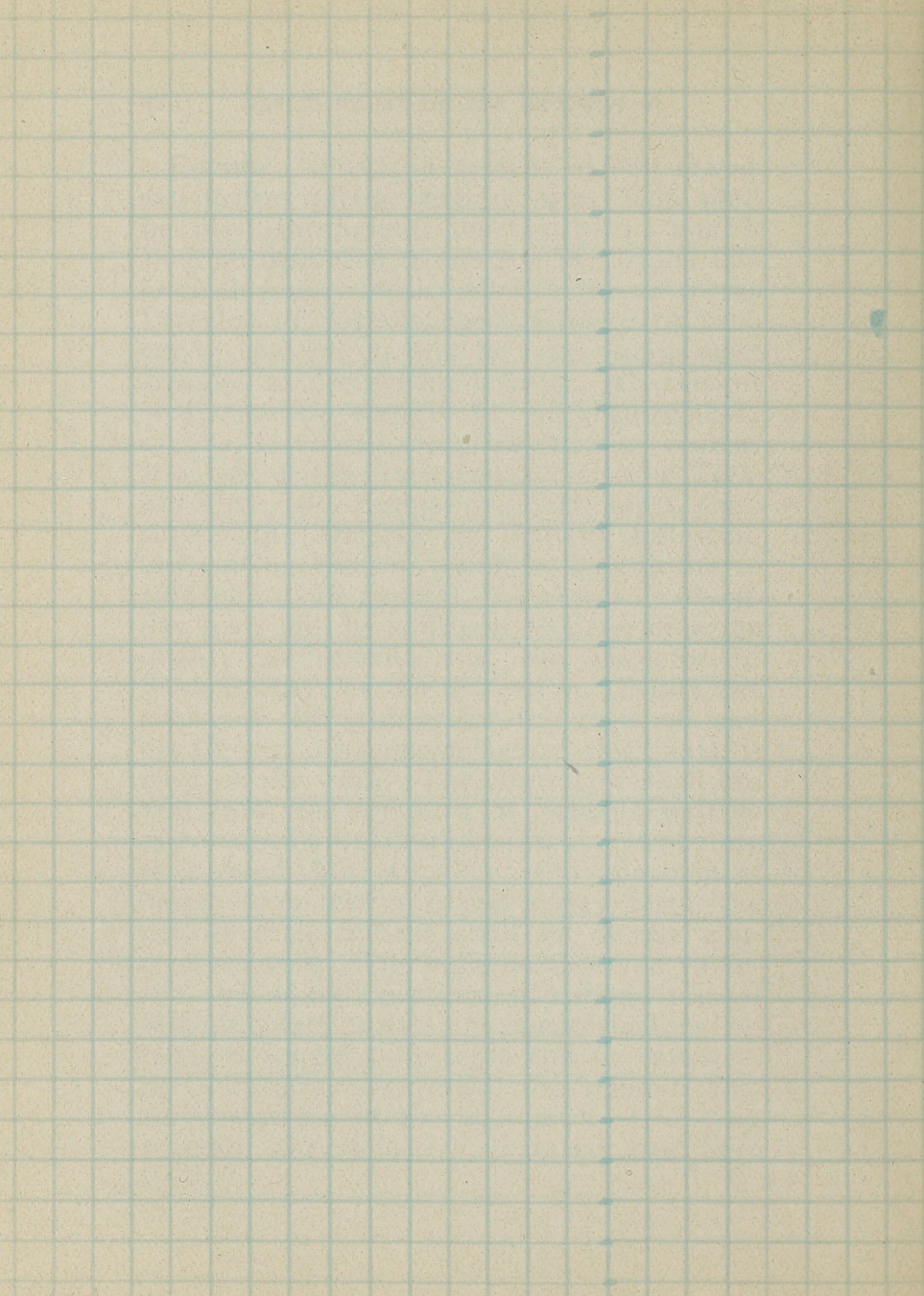
**Cinder Concrete.** Cinder concrete, where used for filling at entrances, bay window roofs, and roof over locker room, shall consist of cinders or slag mixed in proportions of one part cement, three of sand and seven parts cinders or slag.



**Cement.** Portland cement of one brand, satisfactory of the Director of Schools, shall be used throughout on the work, and it shall be delivered to the site in carload lots in cloth bags. Notice shall be given to the Director of Schools upon delivery of each car of cement, so that he may obtain such samples as desired for testing. All cement shall conform strictly to the requirements of the standard specifications for cement adopted by the American Society for Testing Materials, August 15, 1908, and it shall satisfy the Director of Schools following any further tests to which he may desire to subject it. In general, the result of seven-day tests will be sufficient to determine the quality of cement, but the Director of Schools may, at his discretion, require the elapse of thirty days for the tests on any or all cars of cement before the same is used on the work. The contractor shall obtain from the Director of Schools written approval of all carload lots of cement before it is used, but whenever the approval is based upon results of seven-day tests, the use of such cement shall be at the contractor's risk. The right is reserved to reject the unused portions of carload lots of cement which may show unsatisfactory results in longer time tests and to cause, at the contractor's expense, the removal and reconstruction of the portions of the work wherein the defective material has been used.







A sufficient supply of cement shall be kept on hand to insure the elapse of time required for testing without delay to the work; it shall be stored in a properly protected place, and in such a manner that each carload lot can be easily identified at any time prior to its removal. All cement which may be rejected shall be at once removed from the premises.

**Sand.** The fine aggregate shall consist of sand, free from all injurious matter, and the maximum particles of which will pass through a screen having  $\frac{1}{4}$ " diameter holes.

**Stone.** The coarse aggregate shall consist of crushed limestone or gravel which is retained on a screen having  $\frac{1}{4}$ " diameter holes, the maximum particles passing a screen with  $\frac{3}{4}$ " diameter holes.

The fine and coarse aggregates shall at all times be subject to approval of the Director of Schools, both as to its quality and to relative proportions of intermediate particles.

**Steel.** All reinforcing steel, unless otherwise specified, shall consist of plain round rods having an ultimate strength of from 55,000 to 65,000 pounds per square inch, and shall conform to the specifications for structural steel of the American Society for Testing Materials, dated August 16, 1909,



except that the elastic limit shall not be less than 32,000 pounds per square inch. The contractor shall satisfy the Director of Schools by reports of tests that the material he proposes to use conforms to this specification.

The plans contain sufficient information on the steel reinforcement to enable contractors to make estimates, but the detailed plans for bending and placing and exact length of rods for ordering shall be prepared by the contractor and submitted to the Director of Schools for approval.

**Forms.** All forms for concrete work shall be so designed, erected and supported that the dimensions of members will be accurately preserved without serious deflection or distortion in finished work. After erection and final bracing of forms they must be carefully checked over by the contractor for plumb and alignment. Especial care must be taken to preserve the lines of the building and they shall be corrected at each floor if necessary.

Attention is directed to the chamfering of beams, girders and columns, as shown on plans.

The concrete construction in the entire Gymnasium wing, the entire basement of center section, and the columns of all shops shall have concrete surfaces exposed. Therefore, especial care must be taken by the contractor to have smooth and straight sur-







faces in those places, as he will be required to correct any defects in such a manner that the surfaces will be satisfactory to the Director of Schools.

Elsewhere plaster will be used for finished surfaces and rough lumber might preferably be used for forms.

All exposed beams and girders shall be given  $\frac{1}{2}$ " camber.

See note on Forms under Suspended Construction.

**Mixing Concrete.** All concrete shall be mixed with batch mixer of approved type, except when in the opinion of the Director of Schools it may be necessary or expedient to mix by hand, in which case the mixing shall be done in a manner satisfactory to the Director of Schools. Concrete which has partially set shall not be used.

**Placing Concrete.** Concrete shall be thoroughly puddled or tamped with proper tools for the purpose while being deposited.

**Construction Joints.** Care must be taken by the contractor in the location and design of construction joints in the concrete work, and the Director of Schools shall be consulted at all times with respect to the same. In general, construction joints shall be made at the center of floor slabs midway between floor beams, and in such a pane:



that the joint in the girder will be at or near the center of the span. A construction joint shall be made in the columns at the bottom of beams or girders, the concrete in columns being placed at least several hours before beams and girders.

The web of Tee beams and the floor slabs adjoining same shall be placed at the same time. Additional reinforcement will be required at construction joints wherever deemed necessary by the Director of Schools, and the old surface of concrete, wherever new work is joined thereto, shall be carefully cleaned off and grouted as directed.

**Removal of Forms.** The time which must elapse between the placing of the concrete and the removal of forms will depend upon atmospheric and other conditions, and the Director of Schools shall be notified and his approval obtained before supports are removed from the forms. For the information of contractors in estimating, it may be stated that during warm weather the following rules will be carried out in general with respect to removal of forms:

The sheathing may be removed from floor slabs and sides of beams and girders in not less than one week, providing supports are replaced under floor slabs for one additional week, and provided, also, that the supports for beams and girders







are not disturbed. The supports under beams and girders shall not be removed in less than three weeks; the forms for columns and walls may be removed in not less than one week.

**Cleaning Forms.** All forms shall be thoroughly cleared of sawdust, shavings or other matter, before concrete is placed. This shall preferably be done by water under pressure, temporary drain holes being made in the forms if necessary. All forms shall be wetted thoroughly before concrete is placed.

**Concreting During Extreme Weather.** Concrete shall not be placed during freezing weather, unless special precautions are taken to heat the materials before mixing and to protect the work in an approved manner until the concrete has finally set. During hot weather, concrete shall be kept wetted down until it has thoroughly set.

**Bending and Placing Steel.** Reinforcing steel shall be bent wherever required, avoiding sharp angles at the bends. Special care shall be taken by the contractor to get the rods in their proper places, and means shall be taken, by wiring or otherwise, to prevent their displacement during concreting.



**Cleaning Steel.** All reinforcing steel shall be free from dirt or foreign matter before placing, but a slight coating of rust is not objectionable.

**Splicing Steel.** Generally no splicing of reinforcing steel will be permitted in the main body of structural members. Whenever it may be necessary, the splicing shall be done as required by the Director of Schools.

**Floor Rods.** Floor steel shall be ordered in such lengths as to extend over as many panels as practicable. Where rods are lapped,  $\frac{3}{8}$ " rods shall extend at least 12 inches and  $\frac{1}{2}$ " rods 18 inches beyond far side of support. Wherever it is not possible to secure such lap, as at walls, the rods shall be hooked at end to provide sufficient bond strength.

Except when otherwise directed, floor rods shall be supported so as to be near to top of the concrete over beams and girders. The stirrups may be so bent as to form a support for a spacer to keep floor rods in their proper position. A flat bar of No. 20 gauge with prongs punched out at regular intervals equal to spacing of rods, is suggested for this spacing device, but other methods to that end may be used. At the center of spans, floor rods shall be kept up from the forms a distance equal to the diameter of the reinforcing rod used.







**Stirrups.** Unless otherwise noted, all stirrups shall be 1" x  $\frac{1}{8}$ " flat steel. Whenever rods are placed at the tops of beams or girders, stirrups shall be bent down around such rods. Elsewhere they shall be bent so as to extend into the floor slab.

**Suspended Construction.** The Auditorium balcony, Running Track and visitors' gallery in Gymnasium, will be supported from the steel trusses by suspension rods, which will be furnished, erected and adjusted by the structural steel contractor. The Auditorium balcony and visitors' gallery of Gymnasium are of concrete construction and shall be built in as the work progresses, holes being left in the concrete to receive the suspension rods. Washers will be used as shown on plans, and sheet lead placed between washers and concrete to insure an even bearing. After adjustment of suspension rods, the holes in the concrete through which they pass shall be filled with cement grout.

Forms and shoring under the above construction shall be designed and erected in such a manner that the load can be transferred to the trusses gradually and without impact.

**Auditorium Floor.** The main floor of the Auditorium shall have a uniform rise on radial lines as shown on plans. The finish



for this floor is not included under this head.

**Walls.** The sizes and reinforcement for concrete walls are shown generally on the plans. Unless otherwise noted, however, the reinforcement shall consist of  $\frac{3}{8}$ " rods, 12" centers both ways. Wherever concrete walls are attached to columns they shall be built at the same time as the columns unless otherwise permitted by the Director of Schools, and reinforcement for the walls shall extend through the columns. At all corners of walls the horizontal reinforcement shall extend at least two feet past the corner.

Wherever necessary for the future connection of concrete work, such as floors, walls, stairs, etc., this contractor shall make such provision therefor as may be required by the Director of Schools.

**Footings.** Both courses of footings shall be placed at the same time. Steel reinforcement for footings shall have typical hooks at ends, but may be ordered so that the rods may be bent hairpin style with hooks only on free ends.

**Grillage.** Grillage plates shall be used in all footings as shown on plans.

**Columns.** All reinforcement for columns shall be ordered and placed in two-story







lengths wherever practicable. Rods up to  $1\frac{1}{8}$ " diameter inclusive shall be lapped for splice at floor levels. The length of lapping required shall be 30 inches for  $\frac{3}{4}$ " and  $\frac{7}{8}$ " rods, and 36 inches for 1" and  $1\frac{1}{8}$ " rods. Rods  $1\frac{1}{4}$ " diameter and larger shall be spliced at floor levels as shown on plans, using standard wrought iron gas pipe sleeves free from dirt or grease.

Wherever it is impossible to make lap or butt splice of column rods, the joint shall be made by the use of short rods as directed.

All hoops and bands for columns shall be  $\frac{1}{4}$ " diameter, and hoops shall be continuous wherever practicable. The maximum pitch of the hoops or bands shall be 8" for all columns where the least side does not exceed 14", and 12" for all other columns. The maximum pitch for hoops and bands shall be reduced one-half for a distance of two feet above base and two feet below point where lowest load is applied. Where more than one system of hoops or bands is used, they shall be staggered and the maximum pitch for each system shall not exceed the above limits.

**Pointing Up.** After removal of the forms, the contractor shall carefully point up all defects which may appear in the concrete surfaces.



**Testing.** Structural work not exceeding five per cent. of floor construction, shall be tested at such times and in such manner as the Director of Schools may require, but at the contractor's expense, and any defect due to carelessness on the part of the contractor or faulty workmanship shall be corrected.

**Alternate Bid.** Attention is directed to Sheet No. 27 for changes in concrete sections of wall girders and anchorage in case stone is used instead of terra cotta; and this contractor shall submit two bids, one assuming the use of stone and the other of terra cotta.

## BRICK WORK.

(Read General Conditions.)

**Work Included.** Under this head is included all materials, labor and equipment necessary for the satisfactory completion of the following items:

The Brick work complete except as hereafter specified.

The cast cement work complete, including the steps, of the rear terrace above the wheel guard.

The interior cement window sills.

The raggle blocks for roof flashing.







The setting of all terra cotta, including the furnishing and setting of the necessary anchors for same.

The furnishing and setting of all anchor bolts for the wood wall plates supporting rafters.

The setting of all bearing plates.

The setting of steel mullions in large windows, third floor.

The setting of all steel lintels and transoms unless otherwise specified.

The setting of clean-out doors, grilles, etc., where required, and the setting of all bolts, anchors, bars, rods, ties, etc., required for the connection of steel or wood construction to brick work or terra cotta.

**Work Not Included.** Where only the setting of material is specified, the contractor shall understand that the material itself will be furnished by other contractors.

The furnishing of the exterior face brick, as hereinafter specified, is not included under this head.

No interior walls, partitions or vent flues, whether of brick or other material, except such as are specifically mentioned hereafter, are included under this head.

The steel lintels or girts attached to the



face of the concrete beams over all exterior openings, the wire anchors for the support of brick or terra cotta facing, and all other anchors which are to be embedded in concrete, will be put in place by the contractor for concrete work and are not included under this head.

**In General.** All brick used in the course of the work shall be of the same quality as the samples submitted to the Director of Schools and approved by him.

**Checking and Setting Out.** The contractor for brick work shall check all previous work before setting out his own. He shall neither rely on, nor accept, former dimensions, but lay out his own work according to the figures given on the drawings.

The contractor for brickwork shall assist the carpenter in setting all arch centers, door and window frames, and when these are stayed in position, he shall see that they are kept plumb and square as the walls go up. The contractor for brick work shall set steel lintels over all wall openings as shown, adjust and brick in all structural anchorage, and shall assist all other craftsmen in any work directly related to the brick construction.

All window and door jambs, mullions, sills and heads shall be carefully construct-







ed as shown, and all walls, unless otherwise specified, shall be left ready for plastering.

**Arches.** Arches, either flat or curved, shall be constructed over all openings not provided with lintels. All arches shall be turned over wood centers furnished by the contractor for carpenter work.

**Refectory Windows.** In the construction of the two large Refectory windows, it is suggested that the side jambs be carried up to the height of the transom bar, before the steel mullions are set, so that when erected the steel mullions may be anchored laterally by the steel transom bar.

The arches over these windows shall consist of not less than four rowlocks, bonded full width, and this contractor shall provide sufficient lateral support for same to prevent buckling during process of building, or while the walls are green.

**Hollow Brick Backing.** The backing of all exterior walls, below the roof line and above the grade line, except where otherwise specified, shall be constructed of hard burned hollow brick of local or other manufacture.

**Solid Brick Backing.** The brick in all walls below the grade line and the walls exposed to the weather, including the in-



side of smoke and vent stacks, shall be hard burned foundation brick. All others shall be of good merchantable quality, of which not less than 70% shall be hard burned. These bricks shall be of local manufacture.

The backing shall be thoroughly **bonded** to the face brick at intervals not exceeding six courses in height.

The backing of walls around the entire third story, from elevation 148' 3" up to 164' 0", shall be constructed of solid brick. Above elevation 164' 0" and below elevation 148' 3" hollow brick shall be used as before specified.

All walls exposed to the weather on both sides shall be built hollow as shown, of solid brick.

**Fire Walls.** The walls separating the Auditorium and Gymnasium wings from the attic, and the walls around the skylights of the wing stairs in attic, shall be constructed of solid brick, built up tight to the under side of roof.

The external angles of all walls, including mullions, jambs and heads of openings, shall be constructed of solid brick.

**Smoke Stacks.** The smoke stacks from the boiler room shall be constructed of foundation brick, and shall be lined on the inside from the bottom to a height of 35 feet with No. 1 wire cut, standard size fire brick.







These stacks shall be built up at the same time as the concrete frame, story after story as the concrete forms are removed.

The topping out above the roof may be left until the brick work in general has reached the final stage.

Openings for smoke breeching shall be left in the stacks where shown or directed.

Clean-out doors shall be set at the base of each stack where shown. These will be furnished by other contractors.

**Vent Stacks.** Vent stacks shall be constructed as shown, of foundation brick, and shall be built up from and supported by the concrete roof framing.

Openings into stacks shall be left where shown or directed.

The walls of the two large vent stacks, from the attic floor to the roof beams, are not included under this head.

**Foundry Stack Curb.** The curb of the foundry cupola stack, including the cement cap, shall be constructed as shown on the roof plan. The stack itself is not included under this head.

**Pressed Brick Interior Lining.** The walls of the Gymnasium, the Vestibule stair hall of same, the Visiting Teams' Rooms, the Club room, the Manual Training Shops, consisting of the Machine Shop, the Forge



Shop, the Wood-turning and Pattern Shops, the Foundry and the Joinery Shop, together with the General Storeroom, the Locker and Wash rooms between the Foundry and Wood-turning Shop, ground floor, and between the Joinery Shop and Freehand Drawing room, first floor, so far as they are included in this contract, shall be lined inside with gray or light buff pressed brick, laid up with tight joints in lime mortar gauged with portland cement, neatly struck. The window jambs and mullions and the door jambs shall be carried up in round cornered bricks, radius not to exceed  $\frac{1}{2}$ ". Arches shall be constructed where lintels are not provided.

This lining shall constitute the inner four inches of backing and is intended to finish the walls of the rooms mentioned without plastering; hence, a neat job will be required. The bricks shall be true and uniform in size, with perfect face and full arrises. Bricks nicked or marred in shipment will not be permitted in the work.

In the Gymnasium, the Vestibule stair halls of same, the Visiting Teams' rooms, and the Club room, the brick mullions of window openings, the quoining around door and window openings, the base and sill courses, etc., as shown, shall be laid up in red pressed brick, with rounded corners as before specified. All arch brick shall be ground to the proper radius as per detail.







Other brick, including the best grades of common brick and sand lime brick, will be considered for the lining of the Machine Shop, Forge Shop, Wood-turning and Pattern Shop, Joinery Shop, the General Store-room, the Locker and Wash room between the Foundry and Wood-turning Shop, ground floor, and the Locker and Wash room between the Joinery Shop and Free-hand Drawing room, first floor, so far as such lining is included in this contract. But samples of such brick shall be submitted to the Director of Schools for his approval.

**Inside Sills of Shops.** The inside window sills of the shops and locker rooms specified to be lined with brick, shall be formed of portland cement mortar. Proper wood forms shall be made and the sills shall be cast in position. When the mortar has set sufficiently, the forms shall be removed, the sills properly troweled and finished, the edges slightly rounded, and the brickwork cleaned free of mortar. White or light colored cement, fine lake sand and a small percentage of ground lime putty shall be used, and the sills shall be perfectly straight and in line when completed.

**Exterior Face Brick Laying** (See Exterior Face Brick.) The contractor for brick work shall receive the face brick f. o. b. cars, Toledo, Ohio.



All brick shall be laid up in flemish bond, alternate header and stretcher, in courses 3" center to center, producing a heavy joint  $\frac{7}{8}$ " to 1" thick; 75% of the headers may be half brick, full headers shall be used for bond.

The bricks shall be bedded and tapped in position and when the mortar has set sufficiently, the surplus shall be cut off flush with a trowel or straight edge and left in the rough. A sufficient amount of work shall be laid up with trial mortar, under the direction of the Director of Schools, as a sample, to enable the bricklayers to understand what is desired, before beginning the regular work upon the building. When the mortar on finished work has set firmly, a brush shall be passed over the joints to remove loose particles of mortar and to clean the face of the brick.

Walls shall be covered at night and shall at all times be protected from the weather.

**Cleaning Down.** When the walls are completed, the brick work, including the terra cotta, shall be cleaned down, using as little acid as possible in freeing the face brick from mortar or stains.

**Vitrified Brick.** The main wall of the building over the Locker room and Entrance Porches, front elevation, from the roof line to a height shown on sheet No. 22, shall be laid up with vitrified brick.







These brick shall be of a color to match the face brick and shall be laid with close joints.

**Mortar—General.** Mortar for brick work throughout, except as otherwise specified for brick lining and exterior face brick, shall be composed of portland cement one part, and clean, sharp lake sand three parts, with a small quantity of lime putty added to facilitate its working. Portland cement of one brand acceptable to the Director of Schools, shall be used, and shall accord with the Cement specifications under head of Concrete Structural Work.

**Mortar—Exterior.** The mortar for the exterior brick work shall be composed of portland cement one part, lime putty  $\frac{1}{4}$  part, sand 2 parts, and pebbles of a size not less than  $\frac{1}{4}$ " and not more than  $\frac{1}{2}$ ", four parts. Fifty per cent. of the pebbles shall be light gray or white in color. Sand shall be clean washed lake sand.

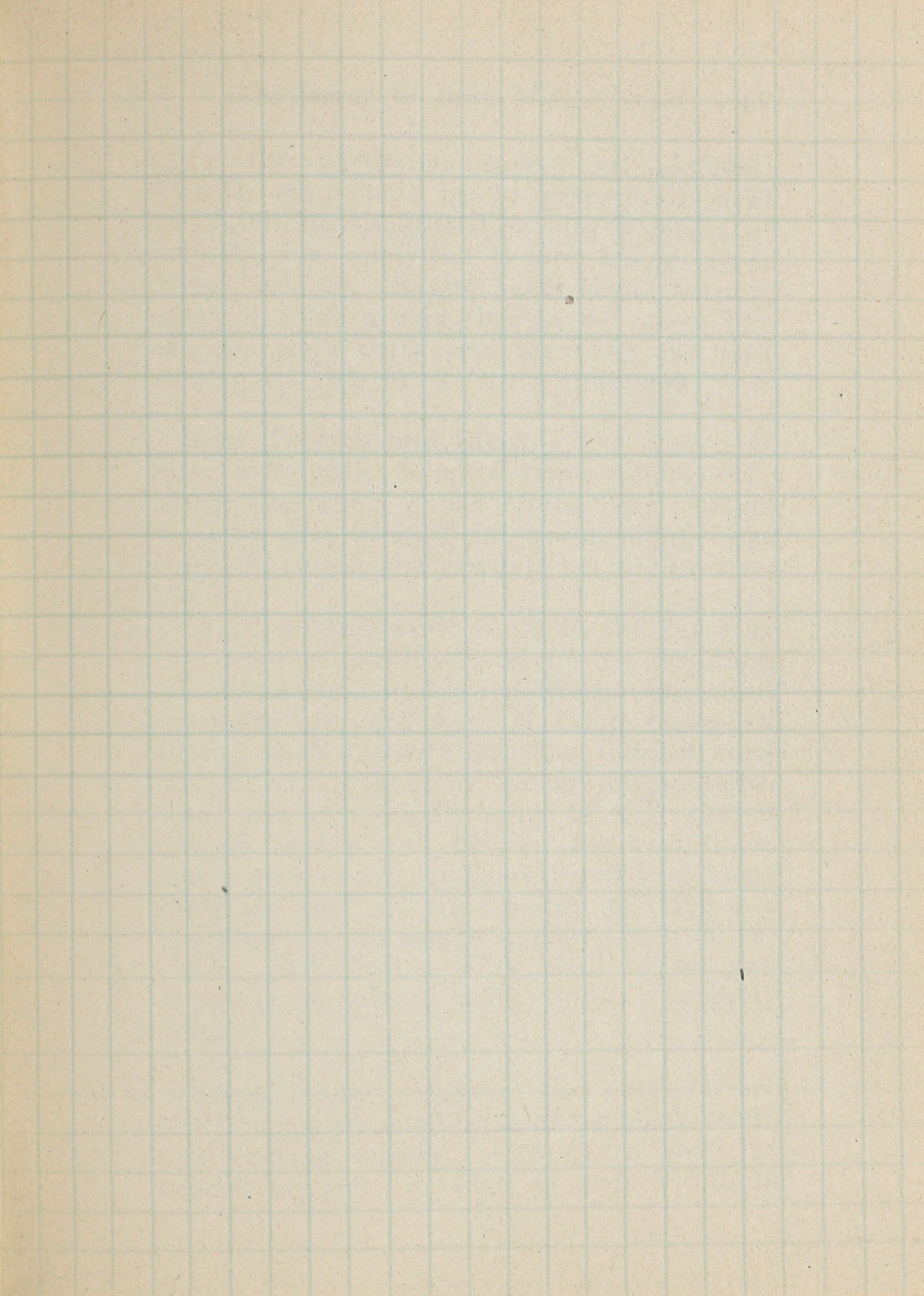
**Raggle Blocks.** At the back of all parapet walls and wherever flashing occurs in connection with the brickwork, raggle blocks of standard shape and size No. 200 shall be built into the walls. Campfield Raggle Block Co., Richmond, Ind.

**Setting Terra Cotta.** The contractor for

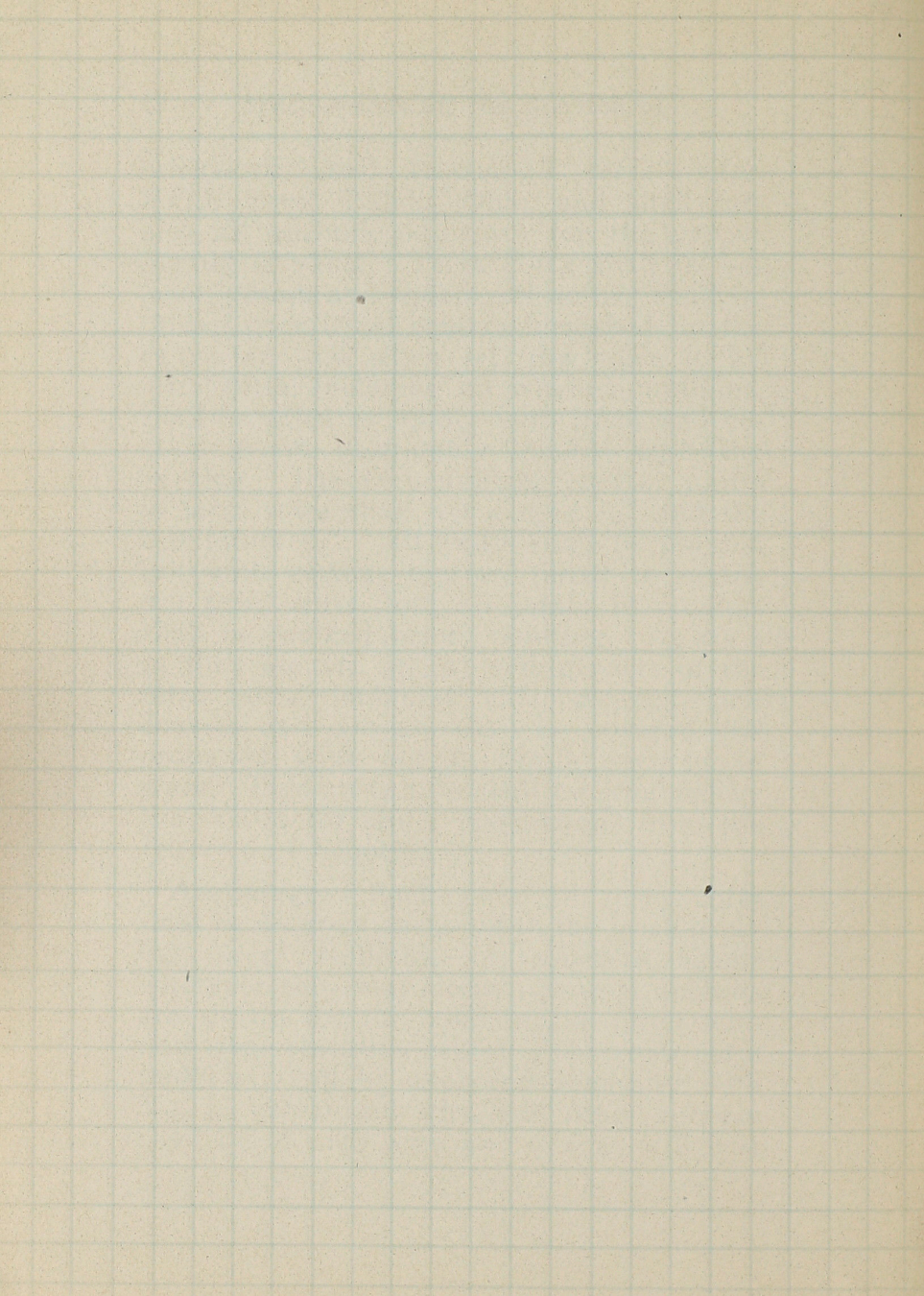


brickwork shall receive all terra cotta, F.O.B. cars, Toledo, Ohio, and shall furnish all anchors necessary for the proper setting of same. Terra cotta shall be set level, plumb and square, all arches shall be turned over wood centers furnished by the carpenter, and when set, the voids in all terra cotta, including all window mullions, shall be filled in solidly with brick and cement grout, thoroughly bonded with the backing. The perpendicular mortar joints in terra cotta shall not exceed  $\frac{1}{4}$ " and the bed joints  $\frac{1}{2}$ ". All joints shall be pointed full with cement mortar, tinted to match the terra cotta, and all joints in copings shall be caulked before pointing. As soon as they are set, all projecting parts of the terra cotta, including sills, copings, belt courses and cornice, shall be covered and protected with boards firmly secured in place. This protection shall be removed by the Contractor under instructions from the Director of Schools.

**Anchorage.** Each piece of terra cotta shall be securely anchored to the brick backing, steel mullions, or concrete beams wherever they may occur. Special anchors are shown for the soffit of the Oriel window, rear elevation center. The terra cotta mullions shall be anchored generally with No. 12 galvanized wire, and other anchors shall be of such form and size as will best







serve the particular case. All anchors, dowels, etc., shall be of galvanized steel and shall be submitted to the Director of Schools for approval before being used. They shall be set and secured to the masonry in such a way that by no possibility can the terra cotta separate from the wall structure. See terra cotta drawings.

**Rear Terrace and Steps.** The wall copings, balustrade, window trim, shields, etc., above the wheel guard of the rear terrace, shall be cast in artificial stone, using light colored cement and crushed granite or marble.

In color this work shall be the same as that of the plinth course of the building. All forms shall be true to design and of an even texture and finish. Long pieces of coping shall have reinforcing rods of steel embedded in them as shown on sections. The balusters shall have  $\frac{1}{2}$ " x 2" copper dowels at top and bottom for anchorage, and where necessary, galvanized iron loops shall be cast in the pieces to facilitate handling and to which anchors may be secured. All of this work shall be set and secured in place, with joints properly pointed.

**Steps.** The steps to the rear terrace shall be constructed with shale brick risers and cement treads. The risers shall be header courses on edge in pure Portland



cement mortar, in the proportion of one part cement to two parts of sand, the joints slushed full with mortar and the face neatly struck. The treads shall be cast in cement mortar. The mixture shall be one part cement to one and one-half parts of clean, coarse sand, trowelled to a smooth surface, finished in one operation. The edge of the tread shall be slightly rounded off and the face neatly finished. Treads shall have a fall of  $\frac{1}{4}$ " from the face of the riser.

The wheel guards and the circular curbs at the foot of the steps are not included under this head.

**Alternate Bid, No. 1.** The Contractor for brick work shall submit an alternate bid, assuming that cut stone will be used throughout, in place of terra cotta as shown. (See stone work, alternate bid.)

**Alternate Bid, No. 2.** The Contractor for brick work shall submit an alternate bid assuming that cast concrete stone will be used throughout in place of terra cotta as shown, including all of the cement work except the steps and floor of the rear terrace. (See cast concrete stone.)







## FACE BRICK EXTERIOR.

(Read General Conditions.)

All exterior face brick, including those in smoke and vent stacks above the roof lines, shall be hard burned shale, with rough wire cut faces and shall not exceed  $2\frac{1}{8}$ " in thickness; 2" x 4" x 8" will be considered a preferable size. The color of the brick shall vary in shades of rich red, from dark terra cotta to brown.

The color of the headers shall vary from light bronze to purple.

All brick shall be laid up with flemish bond, alternate header and stretcher.

All brick shall be equal in quality and appearance to sample on file in the office of the Department of Architecture, Board of Education.

The brick shall be delivered to the Contractor for brickwork, F.O.B. cars, Toledo, Ohio.

## TERRA COTTA WORK.

(Read General Conditions.)

**General.** All exterior trimmings, from and including the ground floor window sill course, to the copings and chimney tops, as shown on the drawings, shall be terra cotta.

Attention is called to the front entrance



porches, the groined ceilings of which shall be terra cotta.

**Material.** Terra cotta shall be of a light stone color, vitreous, vertical tooled surface, hard burned, and free from cracks, checks or other defects.

All terra cotta shall be straight, true to dimensions, and of uniform color and finish.

All terra cotta shall be properly fitted and jointed.

Bed joints shall not exceed  $\frac{1}{2}$ " and vertical joints  $\frac{1}{4}$ ".

All terra cotta shall be strongly ribbed and shall be provided with proper holes for anchorage.

Slots shall be provided in the terra cotta wherever necessary, to receive the flashing.

**Modeling.** All modeling shall be done by men skilled in this branch of the work. The ornament shall be bold and free and shall conform to the details of same.

Photographs of the models of all ornamental detail shall be submitted for approval before being executed.

**Shop Drawings.** The Contractor for terra cotta shall prepare and furnish shop drawings and setting plans, showing plainly the position of each piece in the building. The shop drawings shall also show the method of anchoring, together with details of all anchors.







**Delivery.** The terra cotta, properly protected, shall be delivered to the Contractor for brick work, F.O.B. cars, Toledo, Ohio, in the order in which it will be used. Each piece shall have a mark to correspond with that on setting plans. A sufficient number of extra pieces shall be furnished to guard against delays due to breakage.

**Samples.** Samples of terra cotta shall be submitted to the Director of Schools and approved by him before the work is executed.

**Responsibility.** The Contractor for terra cotta shall state in his proposal, the name of the maker, and shall furnish satisfactory evidence of his responsibility and ability to execute this work.

## GRANITE WORK.

(Read General Conditions.)

**Limitations.** Under this head is included the furnishing and setting of the 6" plinth course at grade 100'-0", the 4" sill course between the front entrance porches at grade 92'-0", and all entrance steps, pier and buttress bases as shown on the drawings.

Granite shall be No. 1 gray granite, equal to No. 1 "Barrie," "Concord," or "Hard-



wich," and shall be perfectly free from iron or other defects, cut to dimensions as shown and dressed square with Axed face, vertical eight cut. The beds shall be at least 6", all outer returns at least 16", and all buttress pier bases in one piece. The steps shall be jointed as shown, and shall lap at least  $1\frac{1}{2}$ " at the riser. Steps shall be set with a fall of  $\frac{1}{8}$ ", and pointed water tight with Portland cement mortar.

## CUT STONE WORK.

(Read General Conditions.)

**Limitations.** Under this head is included the furnishing and setting of the upper part of the plinth course, the bases for piers, buttress, etc., and that part of the wall between the front entrance porches, below the ground floor window sills, as shown on drawings.

**Material.** Stone shall be either Ohio Sand Stone, equal to "Gray Canyon," or Indiana Limestone, equal to Bedford Quarries Co.'s product, and shall be of No. 1 quality, close uniform texture, even color, hard and free from defects. Surface shall be planed with tool marks running perpendicular.







**Setting.** Each stone shall be set on its natural bed and shall be securely anchored to backing with wrought iron anchors furnished by the Contractor for cut stone work.

When 'the walls above are completed and washed down, all cut stone shall be thoroughly cleaned, the joints raked out to a depth of  $\frac{3}{4}$ " and pointed full with non-staining Portland cement.

If Bedford stone is used it shall be set in lime mortar. A coating of lime putty or other approved material shall also be placed on the back of all stone, and the Contractor shall guarantee the work against staining.

**Setting Plans.** Setting plans, showing all jointing, anchoring, etc., shall be furnished to the Director of Schools for approval.

**Samples.** Samples of stone, showing the finish of surface, shall be submitted to the Director of Schools for approval.

**Cut Stone Alternate Bid.** The Contractor for cut stone work shall submit an alternate bid, assuming that stone will be used in place of the terra cotta as described under Terra Cotta work.

The foregoing specification for cut stone shall apply to this proposal, except that a



rubbed finish may be given the stone in place of the planed finish as specified.

The drawings on sheet No. 27 show sections through sills, heads, belt courses, cornices, copings, etc., revised for the use of the stone contractor only, and all work not shown on this sheet shall be done in accordance with the details shown for terra cotta, except the jointing, which shall be revised to conform with first-class stone construction, and the quoining at the corners of the end wings, which shall be omitted. All the necessary anchors, dowels, etc., are included under this head.

**Carving.** Clay models of all ornaments shall be approved by the Director of Schools before being executed.

## **CAST CONCRETE STONE ALTERNATE BID.**

(Read General Conditions.)

A bid for cast concrete stone, including all the material and labor described and shown for cut stone and terra cotta, and also including the cast cement work of the rear terrace described under Brick Work, will be considered.

The quoining at the corners of the end wings shall be omitted.







All cast stone shall be made of Portland cement, equal to that specified for structural concrete, with an aggregate of uniform color and texture, and free from iron or other ingredients liable to discoloration.

**Aggregates.** Aggregates shall be crushed granite or hard marble. The cement and aggregates shall be thoroughly mixed in the proportion of one part of cement to not over six, or less than four parts of aggregate. The aggregate shall be made by crushing selected pieces of stone to insure uniform color and texture, and shall be screened into at least three sizes, the largest of which shall not exceed that which passes a ring one-half inch in diameter, and there shall be at least fifty per cent. of such a size of aggregate that will not pass a ring one-eighth inch in diameter. The various sizes shall be used in proportions to give maximum density and all shall be measured by weight.

The concrete for making the cast stone shall be mixed with not less than fifteen per cent. of water by weight and shall be mixed by a machine, preferably of the Rotary type. If cast in a semi-liquid condition, it shall be constantly agitated, and continuously deposited in the mould.

All casts shall be properly seasoned by being kept moist and away from the sun's rays and draughts for at least ten days after being made.



After having been seasoned for at least ten days, all exposed plain surfaces of the stone below the second story window sill course shall be tooled with a drove finish of four or six cuts to the inch or such other finish as the Director of Schools shall specify. The tooling shall preferably be done by grinding the grooves by the use of an abrasive material so that the larger aggregates will not be disturbed, or in any way shattered.

All surfaces of cast stone shall be true and without hollows, and other than plain surfaces shall be recut where necessary to make perfect. Models of all ornament shall be furnished the Director of Schools for approval, and all stone shall be furnished true to such models.

All cast stone shall be of such quality that it will pass a test at the age of twenty-eight days of at least 1,500 pounds compression per square inch, and shall have an absorption not to exceed five per cent. of weight when thoroughly dried and emersed in water for forty-eight hours.

## STRUCTURAL STEEL.

(Read General Conditions.)

**Work Included.** Under this head is included the furnishing and erection of all structural steel work together with all cast







iron, required throughout the building, as shown on plans or described herein, with exceptions, as follows:

Steel mezzanines in basement and ground floor.

All structural steel for proscenium arch and stage construction in Auditorium.

All furring angles for suspended ceilings.

The erection of steel work in large windows of third story front and rear and the erection of steel lintels in the brickwork, where not connected to the concrete.

Contractors are cautioned to read the whole of the specifications, and special attention is directed to the following items included under this head:

The furnishing and erection of all suspension rods to Auditorium balcony and to visitors' gallery and running track in Gymnasium, together with washers, nuts and sheet lead.

The furnishing of all anchor bolts, stirrups and bearing plates wherever the same are used to connect structural steel to the concrete or brickwork. All of such anchor bolts or bearing plates will be set in place by other contract-



ors in accordance with details furnished by this contractor, and wherever practicable, the structural steel shall be fabricated from templates made in accordance with position of anchorage in finished work. The bolts connecting wood to steel work will be furnished and placed by the carpenter contractor, but holes shall be left by the steel contractor in all of his work where such bolts are to be used.

The furnishing and erection of steel truss reinforcement for third floor concrete girders.

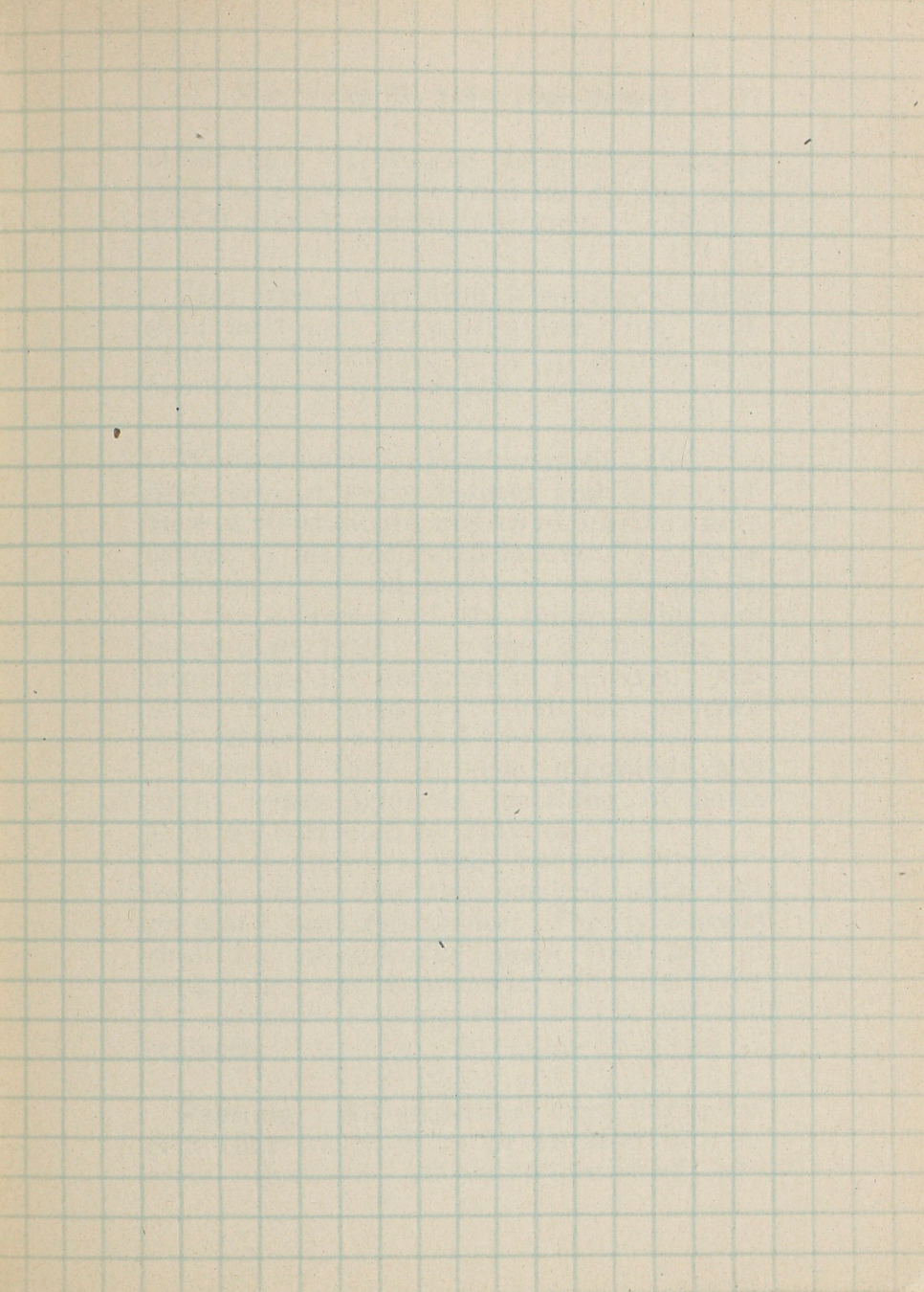
The furnishing of all angle girts and other structural steel around outside of building, and the erection except as above noted.

The furnishing only, of clean out frames and doors at base of smoke stacks in basement.

The furnishing only, of coal hole frames and covers over coal storage.

The furnishing only, of supports for flag pole, including all necessary bolts, clamps and washers.

**Steel.** All structural steel shall have an ultimate strength of from 55,000 to 65,000 pounds per square inch, and shall conform to specifications for structural steel of the American Society for Testing Materials,







under date of August 16th, 1909, except that the elastic limit shall not be less than 32,000 pounds per square inch.

**Cast Iron.** Cast iron wherever required shall be tough gray iron free from cold-shuts or blow-holes, true to pattern and finished in a workmanlike manner.

**Workmanship.** Workmanship shall be first-class in every respect and in accordance with standard approved specifications, except as may be noted below or on plans.

Material  $\frac{5}{8}$ " thick or less may be punched; the diameter of the punch being not more than  $\frac{1}{16}$ " nor that of the die  $\frac{1}{8}$ " larger than the diameter of the rivet. Material more than  $\frac{5}{8}$ " shall be punched and reamed, or drilled from the solid.

Punching shall be done accurately and slight inaccuracies in matching of holes shall be corrected by reaming.

Special attention must be paid to riveting in order that the finished work will present a neat appearance. The rivet heads shall be of approved shape, full and of equal size, and concentric with the rivet. All defective riveting shall be cut out and replaced.

**Painting.** All structural steel work, except that which is to be encased in concrete, shall be thoroughly cleaned and

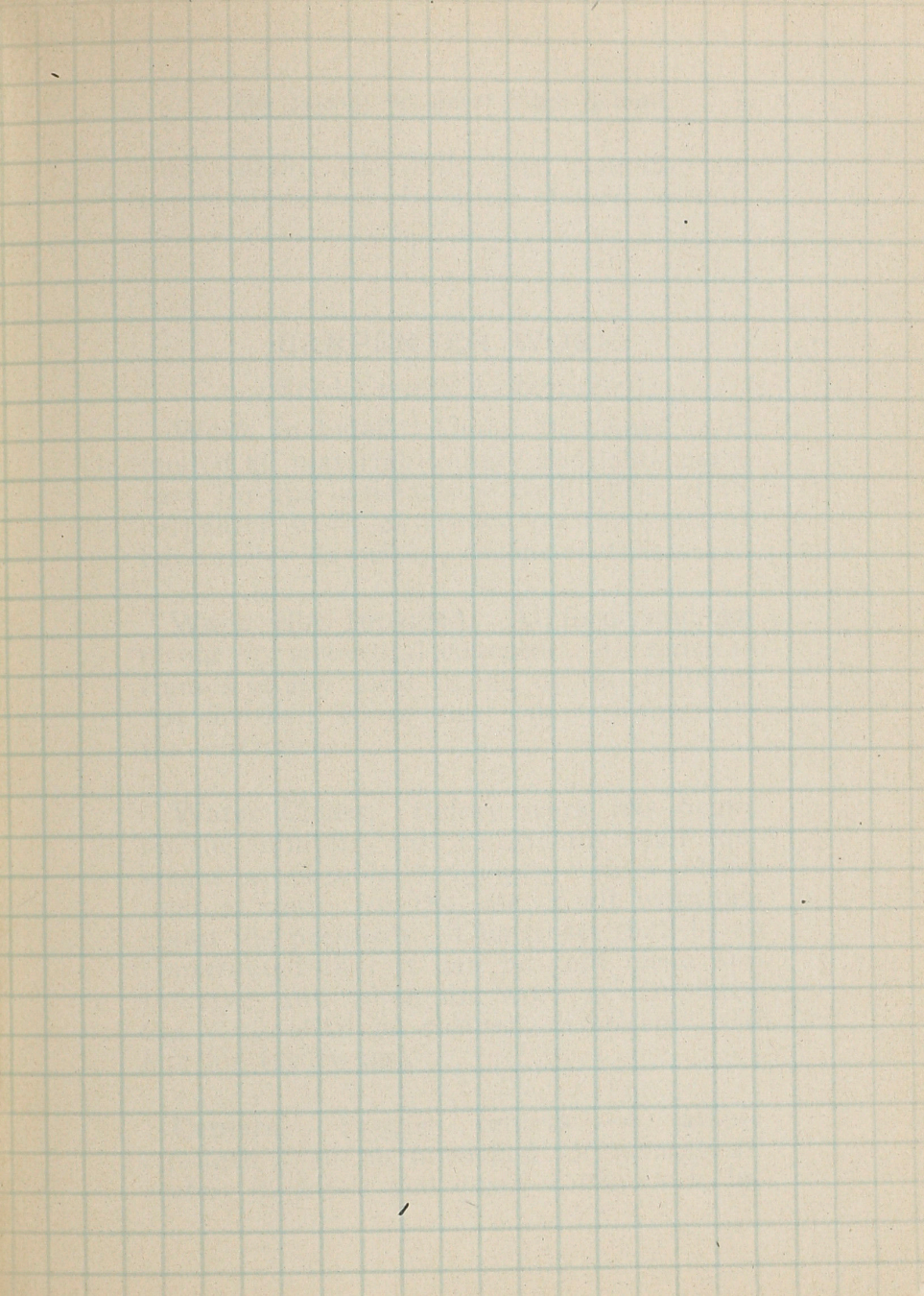


given one coat of approved pure linseed oil paint before leaving the shop. In riveted work the surfaces coming in contact shall be painted before assembling. After erection all exposed metal work shall be painted with an additional coat of pure linseed oil paint of such quality and color as may be selected by the Director of Schools. Work which is inaccessible after erection shall be given two coats of paint before erection.

No painting shall be done in freezing temperature, and all surfaces shall be perfectly dry before paint is applied.

**Working Drawings.** Complete working drawings of all steel work shall be submitted to the Director of Schools and his written approval obtained before work is commenced in the shop. Such approval, however, will not imply correctness of the Contractor's plans as to proper assembling of his work in the shop or connections in the field. The Director of Schools shall be kept informed as to the progress of the work so that he may provide such shop inspection as is deemed necessary.

**Alternate Bid.** Attention is directed to Sheet No. 27 for changes and omissions in structural steel, such as girts, mullion supports and lintels, in case stone is used instead of terra cotta; and this Contractor







shall submit two bids, one assuming the use of stone and the other of terra cotta.

## CARPENTER WORK.

(Read General Conditions.)

**Work Included.** Under this head is included all material, joinery and labor necessary for the satisfactory completion of the carpenter work as shown on the plans or hereinafter described, except as follows:

**Work Not Included.** All forms and centering for structural concrete. All finish or frames of any kind inside of the building. All finished doors and door frames for the entrances.

**Water Closet.** Before work has begun on the building, this Contractor shall construct a suitable temporary water closet over a vault, for the use of all workmen about the premises. This closet shall be so constructed that it can be kept clean and sanitary, and when the work is completed the vault shall be cleaned, disinfected and left for future use.

**Centers.** Proper centers of ample strength shall be furnished for turning all arches in brick and terra cotta work in-



cluding the vaulted ceilings of main entrance porches. These centers shall be substantially constructed, and well supported in place. Where the radii of arches are not shown on drawings, full size details will be furnished.

- Window Frames.** Window frames shall
- be made for sliding, pivoted and hinged sash.

The notes on the elevation sheets of the drawings describe the type and position of the windows required.

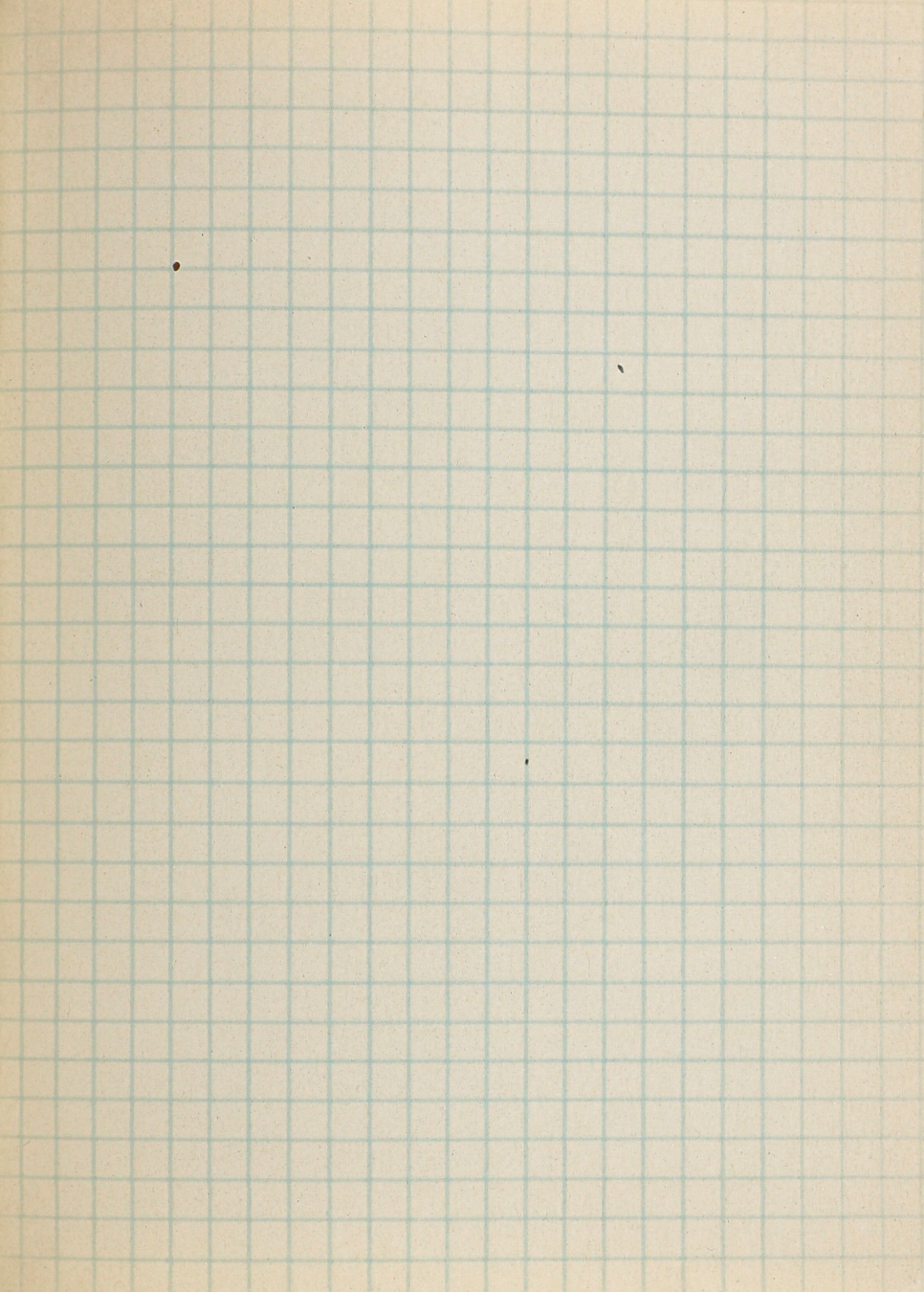
The frames for the large mullioned windows of the Refectory, third floor, front and rear, shall be of iron and are not included under this head.

**Frames for Sliding Sash.** All window frames shall be accurately and substantially constructed in accordance with the details of same. The pulley stiles shall be of clear Southern Pine and the remainder of California White Pine. All exposed wood shall be perfectly clear and parts not exposed shall be sound and free from loose or black knots, sap or shakes.

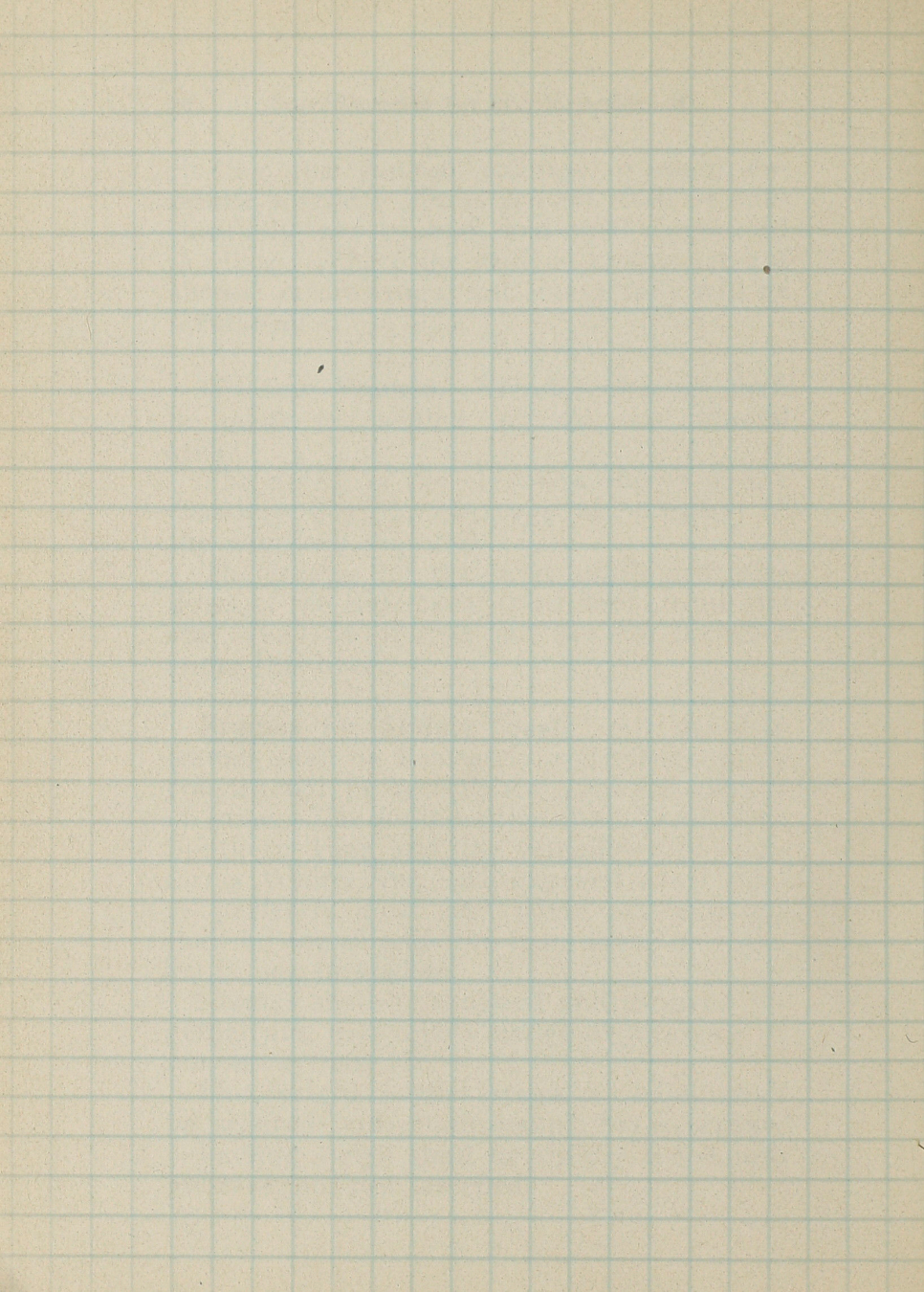
Frames shall be tongued and grooved together and thoroughly nailed at intervals of not more than 12".

The weight pocket strips in stiles shall be secured with countersunk brass screws.

Parting strips shall be tightly fitted into grooves, but not fastened.







All frames shall be fitted with axle pulleys as hereinafter specified, and after being fitted the pulleys shall be removed and left until the sash are hung.

Galvanized iron weight separators 1/16" x 2" shall be provided and shall be suspended from the heads of the frames.

**Frames for Pivoted and Hinged Sash.**

These frames shall be of the same material as specified for other frames, and shall be made in accordance with the details.

**Rough Outside Door Frames.** The rough frames only will be included under this head. All outside entrances shall have rough frames of yellow pine or spruce, well secured in place with expansion or toggle bolts.

The inside of the jambs of these frames shall be flush with the masonry opening and the heads shall be carefully made to conform with the radii of the masonry arches.

**Setting Frames.** All frames shall be set plumb and square and shall be securely stayed in position and the Contractor for carpenter work with the Contractor for brick work, will be held responsible for their accuracy.

Where grouped windows are shown, care



shall be taken to keep the frames in line inside, and parallel with the walls.

**Sash.** All sash shall be of clear white pine  $1\frac{3}{4}$ " thick, mortised and tenoned wedged, glued and made in accordance with the details for same. All sliding sash shall be made with lugs at the meeting rail. All sash shall be rabbeted for plate glass and putty, hand dressed on the inside, and shall be fitted, hung and adjusted with the necessary hardware as hereinafter specified.

**Temporary Doors and Windows.** All outside entrances shall have temporary doors of ceiling construction strongly made and fitted with the necessary hardware. The large windows in the Refectory, third floor, shall be securely boarded up.

**Roof Construction.** All wood used in the construction of the roof shall be No. 1 Southern Pine, sized, framed and erected as shown on the drawings.

**Sizes of Material.** The sizes of material as shown on the drawings are commercial and the finished dimensions, except for the roof sheathing, shall not vary from them more than  $\frac{3}{8}$  of an inch either way.

The roof sheathing, except where otherwise specified, shall be not less than  $1\frac{3}{4}$ " thick, after being sized.







The wood posts supporting the rafters shall be sized to the exact width of the rafter splice and 1" tie pieces shall be securely spiked to rafters and posts as shown.

**Roof Sheathing.** Excepting the Towers, Entrance Porches, and where glass tile are shown, the entire roof surface shall be covered with  $1\frac{3}{4}$ " sheathing, dressed on one side, and either matched or splined.

This sheathing shall be laid with the dressed side down and shall be of such lengths as to extend over at least two spans.

End joints shall be staggered and shall in all cases be made over supports.

The roof sheathing of the Gymnasium and Auditorium shall be secured to nailing strips bolted to the steel purlins.

The sheathing of the Gymnasium roof will form the finished ceiling and shall be entirely free from defects of any kind. Where the roof of the main building joins that of the Gymnasium wing the roof of the latter shall be made continuous in the same plane as far as the attic wall. (See note on roof plan.)

The roofs at each side of the Refectory shall be blocked up from the steel framing and pitched to down pipe outlets, as shown on the drawings.

**Tower Roofs.** The Tower roofs shall be constructed as shown, of 2" x 12" joist cov-



ered with 13/16" matched sheathing. Bridging as shown shall be 2" x 2" pieces, accurately fitted and securely nailed in place.

**Gutter Linings.** All gutters back of the parapet walls shall be made with a uniform pitch to the down pipe inlets and shall be so constructed that warm air from the attic may come in contact with their entire surfaces. When completed, gutters shall be ready to receive the metal lining, as shown on the drawings.

**Dormers.** Dormers shall be constructed where shown. They shall be framed with curved rafters, lined inside and out with 13/16" strips, as per detail, and left ready for the metal sheathing.

**Flag Staff.** The flag staff shall be of selected Oregon pine or spruce, clear, and free from shake. It shall be provided with a metal ball at the top and shall be of the size and form shown on the detail drawing.

Staff shall be neatly dressed, smoothed, fitted into the iron supports, and shall be provided with a brass reeving block and 140 feet of 3/8" manilla line.

A malleable iron cleat of proper size shall be furnished and placed, where directed, on one of the terra cotta mullions of the large Refectory windows. The cleat shall be fastened by means of toggle bolts.







**Hardware.** All the hardware necessary for the satisfactory completion of the work so far as specified, including all window hardware, nails, bolts, screws, etc., and the angle connection for all rafters, posts and plates as shown, shall be furnished and placed by the contractor for carpenter work. The anchor bolts for wall plates, attic, floor plates and roof girder plates will be furnished and placed by other Contractors.

The window frames for sliding sash shall be fitted with  $2\frac{1}{4}$ " turned wheel, bronzed face axle pulleys for chain, equal to Reading Hardware Co.'s No. 80½. The sash shall be fitted with square iron weights hung on bronze chain equal to Smith and Egge Giant chain.

Pivoted sash shall be fitted with bronze sash centers equal to Howarth's No. 51.

Hinged sash shall swing on bronze butts of proper size.

## **SHEET METAL WORK.**

(Read General Conditions.)

**Work Included.** Under this head is included all labor and material necessary for the completion of the sheet metal work as shown on the drawings or hereinafter described.



**Copper.** All copper required for the work shall be 16 oz. sheet copper, either cold rolled or soft, as specified.

Copper nails shall be used wherever nails are required.

**Gutters and Downpipes.** Gutters for the tile roofs shall be lined with soft copper, as shown on the roof plan, neatly dressed to place. All joints shall run at right angles to the length of the gutters and shall be double lock jointed and heavily soldered.

The gutter lining shall not be fastened to the roof, but shall be held in place by means of cold rolled copper cleats spaced about 20" center to center, hooked over the gutter lining and nailed to the roof sheathing as per detail. At the high points of the gutters an expansion joint shall be made, which will provide for a movement of at least 1 inch.

The hanging gutters of the Refectory roof shall be of cold rolled copper, neatly formed with a beaded edge, properly pitched to down pipe inlets and supported on 3/16" x 1½" wrought iron strap hangers, secured to the roof sheathing with screws.

A copper apron shall be cleated to the roof sheathing and shall extend over the edge of the roof and into the gutters, as shown by the detail on Sheet No. 20.

**Down Pipes.** Down pipes from the Re-







factory and Tower roofs shall be of cold rolled copper, 3" x 5" in size, well secured in place with wrought iron supports driven into the brick walls.

The Tower down pipes shall have copper heads properly flashed into the openings through the parapet walls.

The inlets of all down pipes and the outlets of the Tower and Refectory down pipes shall be provided with heavy copper wire guards.

All roofs, decks and gutters discharging into iron down pipes shall be provided with copper funnels, the inlet diameter of which shall be 8". The discharge end of the funnels shall be of the same size as the down pipes to which they are connected.

Brass ferrules of proper size shall be soldered onto the funnels and left ready for caulking into the hubs of the down pipes. The funnels of the asphalt roofs over the third floor and of the cement roof over the locker room on the ground floor shall connect with 10" x 10" copper boxes. These boxes shall be 3" deep, with riveted and soldered joints, and shall be flashed onto the roof at least 12" all around. The installation of the iron down pipes and the connection of the same to the funnels, is not included under this head.

**Valleys.** Valley linings shall be of soft copper 30" wide, measured in a straight line



across the same. The edges shall be turned up and cleated to the roof sheathing, as shown, and the joints shall be made the same as specified for gutters. All valley linings shall be made with a standing partition in the center.

**Copper Decks.** The decks over the bay windows, front and rear, and over the Gymnasium, the Auditorium, the end and rear entrance porches shall be of soft copper, well secured to wood sheathing, and turned up on all sides to the heights shown on drawnigs. Copper spouts shall be provided for discharging water through the parapet walls. Spouts shall have copper wire screens at each end.

**Flashing and Counterflashing.** The intersection of all roofs and decks with walls, stacks, dormers, skylights, curbs, etc., shall be flashed with soft copper and counterflashed with cold rolled copper. All flashing shall extend at least  $3\frac{1}{2}$ " on to the roof and up on the walls to the heights shown.

All joints shall be double locked and well soldered. All flashing shall be secured to the roof with copper cleats. The spillways through the parapet walls shall be flashed and counterflashed and provision shall be made for the expansion and contraction of the copper, as shown on the drawings.







All flashing against masonry walls shall be counterflashed with cold rolled copper. The counterflashing shall be turned into the reglets, joints, or raggle blocks, caulked tight with tarred oakum and pointed up with Portland cement.

Counterflashing shall extend down as shown, and in no case less than  $3\frac{1}{2}$ ".

**Skylights.** The skylights over the Refectory kitchen and the Publishing Room shall be of cold rolled copper, securely mounted on the concrete curb.

The copper ribs shall be reinforced with iron bars and formed so as to discharge the condensation outside. The skylights shall be glazed with  $\frac{1}{4}$ " ribbed skylight glass, set in oil mastic cement, and shall be made entirely water tight.

The entire outside walls of the curbs shall be covered with copper carried down and flashed onto the roof.

**Ventilator Curb.** A circular copper ventilator curb, 8" high and 31" in diameter, flashed onto the roof at least 12" all around, shall be provided and placed where shown on the roof over the Refectory kitchen.

**Dormers.** The dormer windows shown on the roof plan, shall be entirely covered with soft copper, flashed on to the roof, and counterflashed. The face of the



dormers shall be moulded as shown and the sills flashed. All joints shall be double locked, soldered and made water tight. The inside of the dormers shall be lined with zinc, neatly fitted in place, nailed and soldered.

**Louvres.** The seven openings including the transoms, of the fresh air intake, second floor rear, shall be filled with louvres of cold rolled copper. These louvres shall be made with wood frames as specified for windows, and shall be entirely covered with copper. The louvre blades shall be substantially made, with edges crimped around iron stiffener bars, well riveted to the frame and all joints heavily soldered.

The small louvres in the upper part of the towers shall be of the same material and made in the same way as specified in the foregoing and all work shall be in accordance with the details of the same.

**Miscellaneous.** All hatch covers, the saddles behind the smoke stacks, the hoods over the vents around the smoke stacks, and the washes between the smoke stacks and Refectory walls shall be of soft copper, well secured in place. All joints shall be double locked and heavily soldered.

The entire work shall be watertight and shall be done in accordance with the drawings and to the satisfaction of the Director of Schools.







## TILE ROOFING.

(Read General Conditions.)

**Work Included.** Under this head is included all labor and material necessary for the satisfactory completion of the tile roofs, as hereinafter specified.

**General.** All pitched roofs, including the roof of the Refectory, shall be covered with approved standard, interlocking, terra cotta roofing tile. The tile shall be green in color, with a matt or semi-glazed surface. Special tile shall be used for all hips and valleys. These tile shall be of such lengths, that the lines of the roof, both horizontal and perpendicular, will be preserved.

Approved ridge tile shall be provided with proper hip terminals. All sheet metal work in connection with the tile roof will be done under separate contract and the Contractor for these roofs shall read the specification for sheet metal work and shall carefully examine the flashings, etc., on the building before beginning his own work.

The entire surface of the roofs on which clay tile are to be placed shall first be covered with two thicknesses of tarred roofing felt, weighing not less than 3.2 oz. per square foot, well lapped, and nailed in place with barbed nails and tin washers. Upon this felt, wood strips of proper size shall be accurately spaced to receive the tile. Each tile shall be secured with copper nails of ample size.



The horizontal laps in the two bottom courses of tile above the gutters, and those for a distance of three feet each side of the valleys shall be bedded in Slater's elastic cement.

**Glass Tile.** That part of the roof immediately over the end stairs and the parts of the Gymnasium roof where so marked, shall be covered with glass tiles. These tiles shall be of tough, transparent material, sound, of perfect shape, and of the same size and design as the clay tiles.

Glass tiles shall be secured to the steel purlins by means of copper wire.

Samples of all tile intended for this work shall be submitted for approval with the bid and a guarantee against leakage, imperfect material or workmanship for a period of five years from date of acceptance, will be required.

## ASPHALT ROOFS.

(Read General Conditions.)

**Work Included.** Under this head is included all labor and material necessary for the satisfactory completion of the composition roofs as hereinafter specified. The roofs of the four Towers and the flat roof at each side of the Refectory shall be cov-







ered with a composition roof, the materials of which shall be the best of their respective kinds.

**General.** On the roof sheathing, which shall first be covered with rosin sized paper, weighing not less than 5 lbs. per 100 sq. ft., shall be laid asphalt saturated wool roofing felt weighing not less than 14 lbs. per 100 sq. ft. of single thickness, and lapped in such a manner as to produce a five-ply finished roof. As each lap is made it shall be mopped with asphalt roofers' cement and when finished the entire roof surface shall be mopped with asphalt and covered with screened birdseye gravel.

At the brick walls, the felt, reinforced with two additional pieces, shall be turned up and into the flashing slots, and shall be thoroughly cemented to the walls.

All sheet metal work in connection with the composition roofs, will be done under separate contracts, and the Contractor for these roofs shall read the specifications for sheet metal work and shall carefully examine the flashings, etc., on the building, before beginning his own work.

The Contractor for the composition roofs will be required to give a written guarantee against any leaks or repairs, for a period of ten years from date of acceptance.

Other standard brands of roofing will be considered, subject to approval of the Di-



rector of Schools and, if accepted, the foregoing guarantee will be exacted.

## GLASS AND GLAZING.

(Read General Conditions.)

**Work Included.** Under this head is included all labor and material necessary for the satisfactory completion of the glazing as shown on the plans, with the following exceptions:

The large mullioned windows in the center of Refectory, third floor, front and rear.

All exterior entrances and the transoms of same.

The skylights over the Refectory Kitchen and Publishing Room, third floor.

No interior glazing is included under this head.

**Plate Glass.** All glass, unless otherwise noted on the elevations, shall be clear American polished plate.

**Ribbed Glass.** Windows in toilet rooms, locker rooms and elsewhere as noted shall be glazed with ribbed glass.

**Leaded Glass.** The clere story windows of the Refectory shall be glazed with Cathedral glass set in  $\frac{5}{8}$ " white metal bars.







The color of the field shall be a pale amber and the small diamond shapes shall be white Venetian glass.

All glass except where set in metal bars shall be bedded, sprigged and puttied in place.

This Contractor shall, before glazing, give all sash one coat of pure linseed oil.

## PAINTING.

(Read General Conditions.)

**Work Included.** Under this head is included the painting of the flag staff and all outside window frames and sash, except the large center windows of the Refectory, third floor, front and rear, the entrance frames, the structural metal work and all interior finish.

**General.** All frames and sash shall be well cleaned before painting and sash shall be sand papered smooth on the inside. Nail holes shall be puttied up after the priming coat has been applied.

All window frames and sash shall have two coats of pure white lead and linseed oil.

The first or priming coat shall be applied at the factory before the frames and sash are delivered. This coat shall cover



the entire surface of the frames, including sills, boxes, tops and bottoms, except the inside sash runs, which shall be oiled only. The second coat, tinted light gray, shall be applied after the frames and sash are in the walls.

The flag staff shall receive three coats of paint before erection, of the same material as specified for the frames.







# **FORM OF BLANK PROPOSAL**

## **Upon Which All Bids Are to Be Made.**

Bidders are warned that all bids which are deficient in any of the requirements stipulated in the public advertisement, "NOTICE TO CONTRACTORS," may be rejected as informal.

## **BIDDER'S PROPOSAL**

To the Board of Education of the City School District of the City of Toledo, Ohio:

Gentlemen—

The undersigned do hereby declare that we have visited and examined the building site, and have carefully examined the plans, specifications, details and form of contract for the.....

..... prepared by the Department of Architecture of the Board of Education, Toledo, Ohio, David L. Stine, Architect.

We hereby propose to furnish all labor, tools and materials requisite to the construction of all work under the following heads, only so far as filled out. .... further agree that should the bid for all or any part of said labor or material be accepted, .... will enter into a contract for the faithful performance of the labor, and furnishing of all materials included in the bid, and will furnish the bond required, and expressly agree to fully comply with the plans and specifications.

### **1. EXCAVATION—**

Total as specified for the sum of.....  
 .....Dollars ..... Cents (\$.....)  
 Unit price per cu. yd. for excavation  
 below the depth required by the  
 plans .....  
 .....Dollars and.....Cents (\$.....)

### **2. DRAINAGE—**

LABOR .....  
 .....Dollars and.....Cents (\$.....)  
 MATERIAL .....  
 .....Dollars and.....Cents (\$.....)  
 TOTAL .....  
 .....Dollars and.....Cents (\$.....)

### **3. CAST IRON DOWN PIPES AND DRAINS—**

LABOR .....  
 .....Dollars and.....Cents (\$.....)  
 MATERIAL .....  
 .....Dollars and.....Cents (\$.....)



TOTAL .....Cents .....  
 .....Dollars and.....Cents (\$.....)

#### 4. CONCRETE STRUCTURAL WORK—

LABOR .....Cents .....  
 .....Dollars and.....Cents (\$.....)  
 MATERIAL .....Cents .....  
 .....Dollars and.....Cents (\$.....)  
 TOTAL .....Cents .....  
 .....Dollars and.....Cents (\$.....)  
 Unit price per lb. for Reinforcing  
 Steel in place.....Cents (\$.....)  
 Unit price per sq. ft. for wood forms  
 erected and wrecked.....Cents (\$.....)  
 Unit price per cu. ft for concrete in  
 place .....Cents (\$.....)  
 Unit price per sq. ft. for cement  
 mortar finish.....Cents (\$.....)

#### 5. CONCRETE STRUCTURAL WORK—

Alternate Bid—  
 .....Dollars and.....Cents (\$.....)

#### 6. BRICK WORK—

LABOR .....Cents .....  
 .....Dollars and.....Cents (\$.....)  
 MATERIAL .....Cents .....  
 .....Dollars and.....Cents (\$.....)  
 TOTAL .....Cents .....  
 .....Dollars and.....Cents (\$.....)  
 Bid is based upon samples submitted  
 and marked .....

#### BRICK WORK—

7. Alternate Bid No. 1—  
 .....Dollars and.....Cents (\$.....)
8. Alternate Bid No. 2—  
 .....Dollars and.....Cents (\$.....)

#### 9. GRANITE WORK—

LABOR .....Cents .....  
 .....Dollars and.....Cents (\$.....)  
 MATERIAL .....Cents .....  
 .....Dollars and.....Cents (\$.....)  
 TOTAL .....Cents .....  
 .....Dollars and.....Cents (\$.....)

#### 10. CUT STONE WORK—

LABOR .....Cents .....  
 .....Dollars and.....Cents (\$.....)  
 MATERIAL .....Cents .....  
 .....Dollars and.....Cents (\$.....)







TOTAL ..... Dollars and ..... Cents (\$.....)  
 Bid is based upon samples submitted  
 and marked .....

#### 11. CUT STONE WORK—ALTERNATE BID—

LABOR ..... Dollars and ..... Cents (\$.....)  
 MATERIAL ..... Dollars and ..... Cents (\$.....)  
 TOTAL ..... Dollars and ..... Cents (\$.....)  
 Bid is based upon samples submitted  
 and marked .....

#### 12. FACE BRICK, EXTERIOR—

Unit price per M., F. O. B. Toledo, Ohio, for  
 the sum of ..... Dollars and ..... Cents (\$.....)  
 TOTAL ..... Dollars and ..... Cents (\$.....)  
 Bid is based upon samples submitted  
 and marked .....

#### 13. TERRA COTTA—

Total as specified F. O. B. Toledo, Ohio, for  
 the sum of ..... Dollars and ..... Cents (\$.....)  
 Bid is based upon samples submitted  
 and marked .....

#### 14. CAST CONCRETE STONE WORK—

LABOR ..... Dollars and ..... Cents (\$.....)  
 MATERIAL ..... Dollars and ..... Cents (\$.....)  
 TOTAL ..... Dollars and ..... Cents (\$.....)  
 Bid is based upon samples submitted  
 and marked .....

#### 15. STRUCTURAL STEEL—

LABOR ..... Dollars and ..... Cents (\$.....)  
 MATERIAL ..... Dollars and ..... Cents (\$.....)  
 TOTAL ..... Dollars and ..... Cents (\$.....)

#### 16. STRUCTURAL STEEL—

Alternate Bid—  
 ..... Dollars and ..... Cents (\$.....)



**17. CARPENTER WORK—**

LABOR ..... Dollars and ..... Cents (\$.....)  
 MATERIAL ..... Dollars and ..... Cents (\$.....)  
 TOTAL ..... Dollars and ..... Cents (\$.....)

**18. SHEET METAL WORK—**

LABOR ..... Dollars and ..... Cents (\$.....)  
 MATERIAL ..... Dollars and ..... Cents (\$.....)  
 TOTAL ..... Dollars and ..... Cents (\$.....)

**19. TILE ROOFING—**

LABOR ..... Dollars and ..... Cents (\$.....)  
 MATERIAL ..... Dollars and ..... Cents (\$.....)  
 TOTAL ..... Dollars and ..... Cents (\$.....)  
 Bid is based upon samples submitted  
 and marked .....

**20. COMPOSITION ROOFS—**

LABOR ..... Dollars and ..... Cents (\$.....)  
 MATERIAL ..... Dollars and ..... Cents (\$.....)  
 TOTAL ..... Dollars and ..... Cents (\$.....)

**21. GLASS AND GLAZING—**

LABOR ..... Dollars and ..... Cents (\$.....)  
 MATERIAL ..... Dollars and ..... Cents (\$.....)  
 TOTAL ..... Dollars and ..... Cents (\$.....)

**22. PAINTING—**

LABOR ..... Dollars and ..... Cents (\$.....)  
 MATERIAL ..... Dollars and ..... Cents (\$.....)  
 TOTAL ..... Dollars and ..... Cents (\$.....)







**23. BID FOR THE WHOLE—**

Job complete, including all heads:

LABOR .....	Dollars and.....	Cents (\$.....)
MATERIAL .....	Dollars and.....	Cents (\$.....)
TOTAL .....	Dollars and.....	Cents (\$.....)
Unit price per cu. yd. for excavation below level required by the drawings .....		
.....	Dollars and.....	Cents (\$.....)
Unit price per lb. for Reinforcing Steel in place.....		
.....		Cents (\$.....)
Unit price per sq. ft. for wood forms erected and wrecked.....		
.....		Cents (\$.....)
Unit price per cu. ft. for concrete in place .....		
.....		Cents (\$.....)
Unit price per sq. ft. for cement mortar finish .....		
.....		Cents (\$.....)

Bid is based on face bricks as per samples marked.

Brick for lining as per samples marked.

Terra Cotta trimmings as per samples.

Cut stone trimmings as per samples.

Cast stone trimmings as per samples.

Roof tiles as per samples marked.

.....herewith enclose cash, check, bid bond for

\$ .....

Date .....1910.

Toledo, Ohio.

.....  
Contractor.

Parties interested in the foregoing proposal:

.....  
.....  
.....



**COPY OF CONTRACT AND BOND.**

**THIS AGREEMENT**, made the.....day of  
 .....in the year one thousand nine  
 hundred and ..... by and between.....  
 .....  
 .....  
 party of the first part (hereinafter designated the  
 Contractor ), and the BOARD OF EDUCATION of  
 the City School District of the City of Toledo, Ohio,  
 party of the second part (hereinafter designated  
 the Board), the "Director of Schools" meaning the  
 Director of Schools of Toledo, Ohio.

**WITNESSETH**, that the Contractor , in consid-  
 eration of the agreements herein made by the  
 Board, agree with the said Board as follows:

**Article I.** The Contractor , shall and will pro-  
 vide all the materials and perform all the.....  
 .....  
 work in the construction of a school building,  
 known as the.....  
 .....  
 .....in Toledo, Ohio, as  
 shown on the drawings and described in the speci-  
 fications prepared by the Department or Archi-  
 tecture of the Board of Education, which drawings  
 and specifications are identified by the signatures  
 of the parties hereto, and together with said bid-  
 ders' proposals as accepted by the Board become  
 hereby a part of this contract as fully as though  
 expressly embodied herein.

**Article II.** It is understood and agreed by and  
 between the parties hereto that the work included  
 in this contract is to be done under the direction  
 of the Director of Schools and that his decision as  
 to the true construction and meaning of the draw-  
 ings and specifications shall be final. It is also un-  
 derstood and agreed by and between the parties  
 hereto that such additional drawings and explana-  
 tions as may be necessary to detail and illustrate  
 the work to be done are to be furnished by the  
 said Board, and they agree to conform to and abide  
 by the same so far as they may be consistent with  
 the purpose and intent of the original drawings  
 and specifications referred to in Article I.

It is further understood and agreed by the par-  
 ties hereto that any and all drawings and speci-  
 fications prepared for the purpose of this contract  
 by the said Architect are and remain the property  
 of the Board of Education, and that all charges











for the use of the same, and for the services of said Architect, are to be paid by the said Board.

**Article III.** No alteration shall be made in the work except upon written order of the Director of Schools; the amount to be paid by the Board or allowed by the Contractor by virtue of such alteration to be stated in said order. Should the Board and Contractor not agree as to amount to be paid or allowed, the work shall go on under the order required above, and in case of failure to agree, the determination of said amount shall be referred to arbitration, as provided for in Article XII of this contract.

**Article IV.** The Contractor shall provide sufficient, safe and proper facilities at all times for the inspection of the work by the Director of Schools, the Architect or his authorized representatives; shall, within twenty-four hours after receiving written notice from the Director of Schools to that effect, proceed to remove from the grounds or buildings all materials condemned by him, whether worked or unworked, and to take down all portions of the work which the Director shall by like written notice condemn as unsound or improper, or as in any way failing to conform to the drawings and specifications, and shall make good all work damaged or destroyed thereby.

**Article V.** Should the Contractor at any time refuse or neglect to supply a sufficiency of properly skilled workmen, or of materials of the proper quality, or fail in any respect to prosecute the work with promptness and diligence, or fail in the performance of any of the agreements herein contained, such refusal, neglect or failure being certified by the Director of Schools, the Board shall be at liberty, after twenty-four hours' written notice to the Contractor to provide any such labor or materials, and to deduct the cost thereof from any money then due or thereafter to become due to the Contractor under this contract; and if the Director of Schools shall certify that such refusal, neglect or failure is sufficient ground for such action, the Board shall be at liberty to terminate the employment of the Contractor for the said work and enter upon the premises and take possession, for the purpose of completing the work included under this contract, of all materials, tools and appliances thereon, and to employ any other person or persons to finish the work, and to provide the materials therefor; and in case of such discontinuance of the employment of the Contractor.....shall not be entitled to re-



ceive any further payment under this contract until the said work shall be wholly finished, at which time, if the unpaid balance of the amount to be paid under this contract shall exceed the expense incurred by the Board in finishing the work, such excess shall be paid by the Board to the Contractor; but if such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Board. The expense incurred by the Board as herein provided, either for furnishing materials or for finishing the work, and any damage incurred through such default, shall be audited and certified by the Director of Schools whose certificate thereof shall be conclusive upon the parties.

**Article VI.** The Contractor shall complete the several portions, and the whole of the work comprehended by this agreement by and at the time or times hereinafter stated, to-wit:

All work contemplated in this contract shall be completed on or before.....  
and the Contractor shall forfeit and pay to the Board the sum of.....  
..... as liquidated damages for each and every day beyond and after .....  
during which said work shall be delayed or not completed, and any such sum shall be deducted from any payments due said Contractor .

**Article VII.** Should the Contractor be delayed in the prosecution or completion of the work by the act, neglect or default of the Board, of the Architect, or of any other Contractor employed by the Board upon the work, or by any damage caused by fire or other casualty for which the Contractor is not responsible, or by general strikes, or lockouts caused by acts of employees, then the time herein fixed for the completion of the work shall be extended for a period equivalent to the time lost by reason of any or all the causes aforesaid, which extended period shall be determined and fixed by the Director of Schools; but no such allowance shall be made unless a claim therefor is presented in writing to the Director of Schools within forty-eight hours of the occurrence of such delay.

**Article VIII.** The Board agrees to provide all labor and materials essential to the conduct of this work not included in this contract in such manner as not to delay its progress, and in the event of failure so to do, thereby causing loss to the Contractor, agrees that it will reimburse the Contractor for such loss; and the Contractor







agree that if he shall delay the progress of the work so as to cause loss for which the Board shall become liable, then he shall reimburse the Board for such loss. Should the Board and Contractor fail to agree as to the amount of loss comprehended in this article, the determination of the amount shall be referred to arbitration as provided in Article XII of this contract.

**Article IX.** It is hereby mutually agreed between the parties hereto that the sum to be paid by the Board to the Contractor for said work and materials shall be.....

.....  
 .....  
 .....  
 .....

subject to additions and deductions as hereinbefore provided, and that such sum shall be paid by the Board to the Contractor, in current funds, and only upon certificates of the Architect approved by Director of Schools, based on monthly estimates of ..... (.....%) per cent. as the work progresses.

The final payment shall be made within..... days after the completion of the work included in this contract, and all payments shall be due when certificates for the same are issued.

If at any time there shall be evidence of any lien or claim for which, if established, the Board or said premises might become liable, and which is chargeable to the Contractor, the Board shall have the right to retain out of any payments then due or thereafter to become due an amount sufficient to completely indemnify it against such lien or claim. Should there prove to be any such claim after all payments are made, the Contractor shall refund to the Board all moneys that the latter may be compelled to pay in discharging any lien on said premises made obligatory in consequence of the Contractor default.

**Article X.** The Contractor shall make prompt and full payments to all persons furnishing labor or materials under this contract, and save the Board harmless from all costs resulting from his failure so to do.

It is further mutually agreed between the parties hereto that no certificate given or payment made under this contract, except the final certificate or final payment, shall be conclusive evidence of the performance of this contract, either wholly or in part, and that no payment shall be construed



to be an acceptance of defective work or improper materials.

**Article XI.** The Board shall during the progress of the work maintain insurance on the same against loss or damage by fire.....  
.....  
the policies to cover all work incorporated in the building, and all materials for the same in or about the premises, and to be made payable to the parties hereto, as their interests may appear.

**Article XII.** In case the Board and Contractor fail to agree in relation to matters of payment, allowance or loss referred to in Articles III or VIII of this contract, or should either of them dissent from the decision of the Director of Schools, referred to in Article VII of this contract, which dissent shall have been filed in writing with the Board within ten days of the announcement of such decision, then the matter shall be referred to a Board of Arbitration to consist of one person selected by the Board and one person selected by the Contractor . these two to select a third. The decision of any two of this Board shall be final and binding on both parties hereto. Each party hereto shall pay one-half of the expense of such reference.  
.....  
.....  
.....

The said parties for themselves, their heirs, successors, executors, administrators and assigns, do hereby agree to the full performance of the covenants herein contained.

IN WITNESS WHEREOF, the parties to these presents have hereunto set their hands and seals, the day and year first above written.

In Presence of

.....  
.....  
.....

THE BOARD OF EDUCATION, of the City  
School District, of the City of Toledo, Ohio.

By.....  
Director of Schools.









**BOND.**

**Know all Men by these Presents, That.....**  
as principal, and.....  
as sureties, are held and firmly bound unto the  
Board of Education of the City School District, of  
the City of Toledo, Ohio, in the sum of.....  
for the payment of which we hereby jointly and  
severally bind ourselves, our heirs, executors and  
administrators, successors and assigns.

Signed and sealed this.....day of.....

**The Condition of this Bond is such, That** whereas  
the said .....  
was on the.....day of .....awarded  
a contract for the construction of.....  
.....building in the City  
of Toledo, Ohio, and by the terms of said contract  
said ..... agreed  
among other things to complete the said building  
.....and to hold the said  
Board of Education blameless; and also agreed that  
said Board shall not in any manner be liable for  
any loss or damage that may happen to said work  
or material, or any part thereof, during the time of  
construction, and shall not be liable for any injury  
that may occur or may happen to any party work-  
ing in, around or about said work, or who may be  
injured in any manner or under any circumstances  
during the construction of the building.

**Now, therefore, If the said.....**  
shall well, truly and faithfully discharge and per-  
form all and singular the terms of said contract  
and complete said.....  
on or before.....  
and hold the said Board of Education blameless  
from any damage or loss, then this obligation is to  
be null and void; otherwise to be and remain in  
full force and effect. And said sureties expressly  
agree to and waive any notice of any alterations or  
modifications that may be made in the contract,  
plans or specifications after the contract is awarded.

**Witness our signatures, This..... day**  
of .....

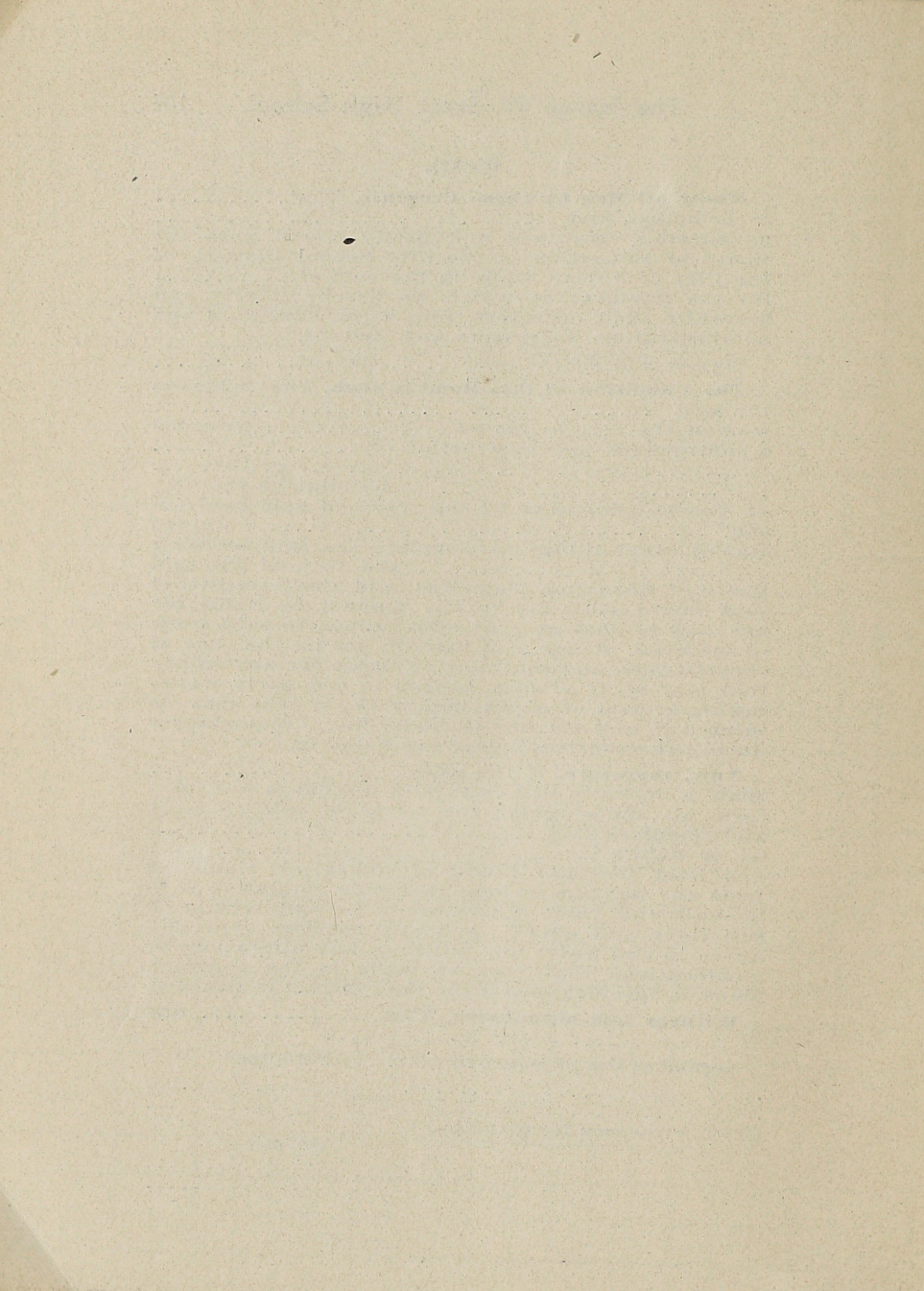
Signed in the presence of: Principal:

.....  
.....  
(Two witnesses for principal.)

Sureties:

.....  
.....















THE B. F. WADE & SONS CO., Toledo, O.





